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The Bacteriology of Diphtheria.—Its Diagnostic Value.

ANDREW MACFARLANE, A. B., M. D.

The history of medicine is a record of the development of the scientific appreciation of what disease is. This growth naturally divides itself in three epochs.

First, the simple observation of the symptoms of disease with the highly imaginative and often absurd theories of causation deduced from these symptoms. These were, to a great extent, due to the old superstitions which still affected men's judgment. Thus we have from the older writers splendid and classic word-pictures of the position of the patient, his expression and the objective symptoms which characterize the course of the disease. But associated with this close study of symptomatology was the fear of the seriousness for the patient of each individual symptom. As a result treatment consisted of enormous doses of medicine with the object of combatting each symptom as though it were in itself dangerous to the life of the patient. This often did more harm than good and brought much discredit upon the practice of medicine.

The second epoch is marked by the thorough investigation of the tissue changes produced by disease—the mechanics of disease. This understanding of what disease was doing in the human organism led to an appreciation of the salutary effect of many of the symptoms and of the ineffectiveness at least, if not the banefulness of indiscriminate drugging.

This therapeutic revolution was not limited to those diseases whose pathology had been closely studied but permeated the entire domain of disease so that physicians endeavored to think of disease not alone as a group of symptoms but as an entity—a morbid change of which the symptoms were but the mere outward expression. The study of pathology revealed to us what changes disease wrought in the body but not what disease really was or why its life history is practically the same in each disease modified simply by individual conditions. This—the crowning glory of medicine—the third epoch has been discovered by workers in that invisible field of microscopic life so potential for good and evil to the human race. The duration, the course, the symptomatology, the complications, the contagiousness, the infectiousness, the cause can now be rationally explained and the physician acts his true part intelligently towards them.

Our consideration of disease can therefore no longer be regarded as limited to the observation of a group of clinical symptoms or restricted to the understanding of pathological changes in tissues, or even confined to the study of the shape, character and life history of micro-organisms, which would be simply microscopic botany, but must embrace all these. It should logically associate the character and growth of the microscopic cause, the changes which it directly and indirectly produces in the body and the manifestations of these changes—the various symptoms. Each one of these is invaluable and essential to the complete appreciation of the entity—disease—and diagnosis in all cases can no more be made in the dead house or the laboratory alone—than in the sick room.

No disease shows more strikingly than does diphtheria these stages characteristic of the growth in the understanding of morbid processes. The early confusion and doubt in regard to all throat affections, whether they were simply modifications of the same disease-process or entirely different in nature. Then the question whether it was a local disease with systemic infection due to the absorption of local toxic products or a general disease with a local expression, the membrane in the throat. Finally the dispute as to the differences in character of the membrane as illustrative of distinctly different pathological conditions.

It was in 1883 that Klebs first recognized in stained preparations of diphtheritic membrane a bacillus which was afterward cultivated and described in 1884 by Loeffler. Loeffler did not claim however, at this time, to have demonstrated the aetiological relationship of this bacillus to diphtheria but later experiments, some of which were made by investigators in this country, seem to warrant bacteriologists in maintaining that this bacillus described by Loeffler is the specific cause of diphtheria. This bacillus is rod shaped, straight or slightly curved, 2-3 m. in length and 0.5-0.8 m. in width, not quite as long as the bacillus tuberculosis but two or three times its width. Irregular forms are very common and characteristic; the extremities are usually swollen and take the stain more deeply. It is aerobic, non-motile and non-liquefying, and grows best at the temperature of 35° C. in the blood serum mixture recommended by Loeffler. This consists of 3 parts of blood serum and one part of bouillon containing one per cent. of peptone and glucose and one-half per cent. salt, rendered alkaline with carbonate of soda. The colonies, after twenty-four hours growth on this medium at a temperature of 35° C., appear as rounded, grayish white colonies with a centre more opaque than the somewhat irregular periphery.

The bacillus is usually stained with Loeffler's alkaline solution of methylene blue though it is stained by the other aniline dyes.

The knowledge of the character and growth of this micro-organism previously of value only for elaborate experiments in the laboratory was used by an American, Dr. Wm. H. Park to, devise a simple practical method by which cultures could be easily made in the sick room by any one without

any previous bacteriological experience, the cultures sent to a central laboratory and the result known within 24 hours. It certainly is a matter of pride to all of us to learn that Berlin, the very fountain-head of bacteriological knowledge, with all the conservatism and critical spirit characteristic of the German intellect, has accepted this, for clinical purposes, as a scientific method and has adapted it for its own use and that Robert Koch himself complimented America upon grasping in this practical way the valuable advances of sciences and making them in so simple a manner available for general use.

It is not necessary for me here to enter into details concerning the culture medium, the methods of making the culture, the process of growth, the staining and the examination. All these facts are perfectly familiar either from practical experience or from reading. What concerns us here to-night is the consideration of the value of this work, whether it has been a decided step forward in enabling us to diagnose earlier and with greater certainty a disease which we all dread, or whether it is a mere bubble on the ever onward stream of science which will after a time burst and in the words of Virgil vanish into thin air.

What we all want to know is the truth. Have we been relying upon a broken reed? Are there some limitations to the value of this method which render it of less value than at first supposed?

The criticisms against this method of diagnosis can be divided into two classes. One brought forward by Hansemann, the assistant of Prof. Virchow, who stoutly denies that the Loeffler bacillus is the cause of diphtheria. The other is that of many physicians who assert that many cases are bacteriologically diagnosed as diphtheria which clinically give no evidences of diphtheria and which they do not believe are diphtheria.

Before considering these objections in detail let us review for a moment the state of the diagnosis of diphtheria before this bacteriological method was introduced and also consider if we can draw from other contagious and infectious diseases any light which may dissipate some of the fog in which this subject seems to be enveloping. The best text-books, only a short time ago, attempted to distinguish between a throat affection—diphtheria—which was contagious and another—membranous croup—which was said not to be contagious by the character and anatomical position of the membrane, convincing enough in the lecture room but which had no value in the sick room.

The mortality statistics of reputable physicians, many of whom were strictly honest, showed a marvellous discrepancy. Some rarely lost a case of diphtheria while others, going to the opposite extreme, asserted that they seldom had a case of genuine diphtheria recover. The thousands of unavailing specifics, a standing ridicule to medical science, spoke equally loudly of how poor blind medicine was groping helplessly about in this labyrinth. To-day no one would claim that practically all cases of diphtheria recover or that any treatment heretofore used was a specific. We all now know that

among very young children about 40 per cent. of the cases in hospital practice diagnosticated by bacteriological methods as diphtheria and treated by any of the older methods die while practically all (96 per cent.) of those diagnosticated as pseudo-diphtheria live with any or no treatment.

We all accept as facts that the bacillus tuberculosis is the specific cause of tuberculosis and that the bacillus of Eberth is the cause of typhoid fever. Yet if we were to rely for our diagnosis of tuberculosis only upon the detection of the bacillus tuberculosis there would be many cases of undoubted tuberculosis presenting all the physical signs of advanced disease which could not be diagnosticated. But it may be claimed that the presence of the bacillus is positive evidence, while its absence is negative. Personally I am inclined to believe that if the sputa of thousands of apparently healthy people could be examined thoroughly a small fraction of that number would show the presence of the bacilli. I remember reading but a short time ago that the nasal secretions of the internes in a large German hospital were examined for bacillus tuberculosis and in more than half the cases bacilli were found. Yet none were considered to have tuberculosis and probably none would ever develop it. This is not merely a chimerical assumption. Many cases at the autopsy show undoubted signs of previous tubercular trouble which had gone on to recovery without patient or physician ever suspecting it. Many of the cases, if the sputum had been carefully examined at that time, would probably have shown the presence of bacilli. Yet no one would call such cases undoubted tuberculosis.

We in Albany have the fortune—good or bad—of seeing a large number of cases of typhoid fever, and we know how very severe some of these cases are, and how very mild are others. There are on record cases of typhoid fever without fever. Yet no one would claim that the mild cases were not as certainly typhoid fever as the severe or that the intestinal discharges were not as capable of carrying infection in the one case as in the other.

The first criticism made by Dr. Hansemann appeared in the *Berliner Klinische Wochenschrift*, December 10, 1894. In this paper he asserted that the Loeffler bacillus was not the specific cause of diphtheria and claimed:

(1) That the Loeffler bacillus is not found in all cases of Bretonneau's diphtheria but only in about 75 per cent, though all must be regarded as typical diphtheria.

(2) The Loeffler bacillus is never found alone, but in conjunction with other bacteria as staphylococci, streptococci, pneumococci, micrococci and a number of other bacteria.

(3) The Loeffler bacillus is found in diseases not identical either clinically or anatomically with Bretonneau's diphtheria as phlegmon of the skin, by mild conjunctivitis, by light pharyngitis and by rhinitis fibrinosa,

The fact that this bacillus has been found only in 75 per cent, of the cases diagnosticated as diphtheria simply corroborates the knowledge that

many cases clinically are diagnosticated diphtheria which are not really diphtheria and probably also that some cultures are not sufficiently carefully made.

The second criticism that many other micro-organisms are found is no more an argument against the specific character of the Loeffler bacillus than would be the same argument against the bacillus tuberculosis.

The third criticism has more substantial basis, and it will be spoken of later when considering the objection based upon clinical experience. Hansemann, in a second paper published in the *Berliner Klinische Wochenschrift*, July 29 and August 6, 1895, reiterates his former position. There is, however, a strong personal tinge to both his papers. In fact the discussion seems to have degenerated into a dispute over the relative value of pathology and bacteriology to the science of medicine, rather than a calm inquiry into the specific cause of diphtheria. This character is due to the unwise statements of some over-zealous disciples of bacteriology, who boasted that this, the youngest child of science, was about to supplant its older brother pathology and in the same way that Virchow's cellular pathology had driven out humoral pathology so a new humoral pathology, based upon bacteriology and illustrated by the serum therapy, would cast into comparative insignificance the cellular pathology. The result was that Hansemann returned the retort courteous and started off on an iconoclastic crusade against the entire science of bacteriology. Some of his strictures are reasonable, but surgery, obstetrics and preventive medicine are too much indebted to bacteriology to allow us to think for a moment of retracing our steps without the weightiest reasons.

It would require too much time to consider all the facts which indicate that the bacillus of Loeffler is the specific cause of diphtheria. It will suffice, I think, to quote here simply the conclusions of Welch and Prudden on this point. Welch has "said all the conditions have been fulfilled for diphtheria which are necessary to the most rigid proof of the dependence of an infective disease upon a given micro-organism, viz., the constant presence of this organism in the lesions of the disease, the isolation of the organism in pure cultures, the reproduction of the disease by inoculation of pure cultures and similar distribution of the organism in the experimental and in the natural disease." Prudden has stated that "we are now justified in saying that the name diphtheria, or at least primary diphtheria, should be exclusively applied to that acute infectious disease usually associated with a pseudo-membranous affection of the mucous membrane which is primarily caused by the bacillus diphtheria of Loeffler."

Granting the assumption that the Loeffler bacillus is the specific cause of diphtheria, the practical question for us is, can the Loeffler bacillus always be identified by methods practicable for clinical diagnosis, and can all bacilli found in the throat resembling the Loeffler bacillus be regarded as the Loeffler bacillus and the clinical diagnosis be made from their pres-

ence alone. This brings us to the consideration of the second criticism, viz., that some cases diagnosticated bacteriologically as diphtheria are clinically not diphtheria and never develop into diphtheria. This is also the third conclusion of Hansemann stated in other words, viz., that the Loeffler bacillus is found in diseases not identical either clinically or anatomically with Bretonneau's diphtheria.

That a bacillus identical morphologically with the Loeffler bacillus, but not pathogenic in character, has been found by many investigators is beyond question. Is this bacillus the Loeffler bacillus implanted on a non-favorable soil, or a Loeffler bacillus which for some cause has lost its virulency, or is it an entirely different species similar in morphology but differing slightly in some of its phases of growth, without pathogenic properties and which has not been sufficiently isolated?

Park, in an examination of 330 cases of healthy persons with no history of direct contact with diphtheria, found eight cases showing characteristic diphtheria bacilli which were proven by inoculation to be diphtheretic, two of these later developed diphtheria; 24 cases of characteristic diphtheria, which were found by tests to be non-virulent, and 27 cases where the bacilli were not characteristic and were also non-pathogenic.

Abbott, in 53 cases of throat affections, none of which were thought to be diphtheritic, found in four cases bacilli resembling in their shape and growth the Loeffler bacillus, but which were not pathogenic.

Hoffman found in the throats of 26 out of 45 persons, none of whom was suffering from diphtheria, a bacillus which closely resembled the Loeffler bacillus.

Roux and Yersin found it in 15 out of 45 healthy children in a hospital where there had been diphtheria.

Escherich discovered it in 13 out of 320 cases. In the N. Y. Infant Asylum at Mt. Vernon, during an epidemic of diphtheria, many children showed the presence of the Loeffler bacillus who did not develop clinical diphtheria.

Although investigators have sought to differentiate these bacilli by morphological characteristics, still the fact that some have claimed that they were a weakened or non-virulent form of the Loeffler bacillus, while others believe them to be a distinct species, indicates their striking resemblance. At the present time it is, I think, generally accepted that both opinions are in a measure correct—that these bacilli are in some cases attenuated Loeffler bacilli and in other cases a distinct species.

This conclusion at once throws a doubt upon the bacterial diagnosis and would seem to warrant clinicians in saying that we are still groping in the dark. This objection is not so serious as would appear, for such cases are comparatively few in number and do not present the evidences of clinical diphtheria with the history of contagion. Although the bacterial diagnosis on account of the presence of this non-virulent bacillus is not in all cases absolutely certain, still I believe it is of very great clinical value.

The following statement of the value of the bacteriological diagnosis in throat affections is, I believe, reasonable and supported by facts. Probably the majority of the tubes submitted for examination show the presence not of a bacillus but of a coccus in some form—streptococcus, staphylococcus, diplococcus. Many of these cases could be diagnosed clinically as non-diphtheritic, but some might easily be confused with cases of diphtheria. These cases appear to be only mildly contagious and the prognosis is usually good, not more than two per cent of uncomplicated cases proving fatal. If, however, they are complications of scarlet fever and measles a fatal issue often results, just as any simple affection in patients very much debilitated may eventuate fatally.

The remainder of the tubes will show a growth either of a pure culture of a bacillus resembling the Loeffler bacillus or a mixture of bacilli and cocci of various forms. In these cases the diagnosis bacteriologically would be diphtheria. This diagnosis in the very great majority of instances would, I believe, be correct, and would always be certain where a membrane was present in the throat. There are a few cases, however, where with an inflamed condition of the throat and without any clinical evidences of diphtheria a bacillus resembling the Loeffler bacillus is obtained in the culture. Here the history and clinical symptoms must decide. A quarantine of two or three days would clear up the diagnosis and prevent the possibility of the transmission of the contagion from an apparently simple throat affection. It has been suggested that in such cases the bacteriological diagnosis be confirmed by inoculations upon animals—all cases showing a bacillus resembling the Loeffler bacillus being viewed with suspicion until the result of an inoculation upon a test animal was known.

In this paper the significance of mixed infections has not been referred to as the consideration of that phase of the subject would simply draw attention from what to us is the thing of greatest importance—the clinical value of the bacteriological diagnosis of diphtheria.

Chronic Diffuse Nephritis with Exudation.

BY S. G. SHANKS.

Chronic parenchymatous nephritis (Interstitial nephritis) is usually a sub-acute or chronic nephritis from the beginning, and ordinarily not recognized until dyspnoea or anasarca suggests an examination of the urine.

Matson's statement, that each tubule in a kidney is a kidney, complete in itself, furnishes an explanation for the insidious character of some forms of renal inflammation, which affect one portion of the tubule at first, leaving others to continue the urinary function. The nature of the irritation and the manner in which the renal structures react, in the endeavor to eliminate it from the blood or protect the renal element from damage, are

factors in producing a variety of histological changes in chronic diffuse nephritis. The characteristic lesions are an inflammatory exudation or œdema between the tubules and vessels, with more or less round cell infiltration, and permanent changes in the glomerules, the exudation is a coagulable lymph, more albuminous than the serum of simple œdema, the cellular infiltration is often particularly dense in patches beneath the renal capsule, and also commonly occurs in stripes or wedges, following certain interlobular blood vessels. These round cells are leucocytes from the blood mixed with proliferating connective tissue cells, aroused into activity in the mechanism of inflammation. Many of these young tissue cells cannot be easily distinguished from the single nucleated leucocytes. In a careful staining, however, the leucocytes will be found to take a deeper color than the tissue cells, and a comparison may be made with the stained leucocytes in contiguous blood vessels, in the section.

This cellular infiltration and proliferation results in a very extensive growth of connective tissue in the renal cortex. Any very apparent amount of connective tissue in the kidney is pathological. In a normal kidney the tubules and vessels lie in close contact. But few connective tissue cells can be detected and these lie almost hidden in narrow spaces surrounding capillary blood vessels.

The glomerulus is very early affected, albuminuria, a prominent symptom, being referable to glomerular lesions. The glomerular epithelium multiplies and desquamates, and if not carried away by the urine, accumulates and obliterates the capsular cavity, compresses and causes atrophy of the tufts or induces fatty and waxy degeneration from impaired nutrition. The albuminous urine may coagulate within the capsule and very commonly does from casts in the tubules.

The tubular epithelium becomes swollen—fatty, granular or flattened and often detached. The nucleus of these cells frequently persists after the cell bodies have become disintegrated, and may simulate new or proliferating cells, but when the tubular epithelium is lost altogether the denuded tubule collapses and becomes lost in the surrounding cicatorial contraction. Blood, albuminous and granular casts are present in the tubules. Coagulated albumin in Henle's loops form the small hyaline casts often seen in the urine.

In the less affected areas of the cortex the tubules and glomeruli appear dilated or are in a condition of compensative hypertrophy.

The arteries may apparently be unaffected, but frequently there is thickening of the intima and media veins of the smaller vessels, and sometimes obliterating endarteritis.

When there is much œdema and cellular infiltration, together with fatty degeneration, the kidney is large, mottled with white or wholly light in color, and is then usually termed large white kidney. The capsule is easily stripped from the succulent cortex, but the now thickened subcap-

sular vessels usually tear out small fragments of the cortex leaving a roughened surface.

The tubal casts commonly present in the urine are small hyaline and fatty epithelial casts, also fatty granular casts held together by coagulated albumen.

A Case of Ammonal Poisoning Dec. 1895.

REPORTED BY CHAS. E. DAVIS, M. D.

I would like to report a case of ammonal poisoning, which I saw a short time ago, in hopes that a warning might be taken, by those who are apt to deal carelessly with such drugs.

Mrs. T., age 25, married; has one child, two years old. Patient has been subject to severe headache, about the menstrual period. She was given sixty grains of ammonal, by a physician, and was told to divide it into four parts, and take one part, and repeat it if necessary. The question was asked, how often shall I take the powders; and the answer was; it does not matter, the whole quantity might be taken at once, and it would do you no harm.

The sixty grains were taken in an hour. When called to see the patient, she was suffering from profound cyanosis. Lips, fingers and nails were blue, face pallid, cold extremities, nausea and vomiting, pulse rapid and almost imperceptible at the wrist. The tongue was also very dark colored. There was a frequent desire to urinate. But the headache, which was occipito-parietal in character, still persisted.

The patient was put in a recumbent position, head lowered, stimulants freely administered, heat applied, and after about two hours time, cyanosis began to disappear, and pulse was stronger.

The extreme prostration for the next twenty-four hours, was very marked; but patient recovered very nicely.

There was nothing in the patient's condition that would make her more susceptible than others might be to use the same drug. This same thing, has occurred several times, in cases of typhoid fever, where it was administered for hyperpyrexia and delirium in 10 grains doses every three hours.

The Results of Double Castration in Hypertrophy of the Prostate.

Dr. J. W. William White has collected the evidence which is now before the profession relative to the operation which he proposed at the meeting of the American Surgical Association, June 1, 1893, in a paper with the above title, read before the same society, May 28, 1895, and before the American Genitourinary Association, May 28, 1895. (*Annals of Surgery*, vol. xxii, No. 1.)

The large number of cases already subjected to this operation, and the discussions that have appeared in the medical journals, render at this time, at least, provisional conclusions justifiable. The present resume is especially interesting, as it presents for the first time a collection of cases and conclusions drawn from them.

The paper is divided into three portions: a theoretical, a clinical, and an experimental.

In the first part the author advances a theory in explanation of the etiology of hypertrophy of the prostate which he considers reasonable, although it is not at present susceptible of demonstration, but which would account for the beneficial results that follow the operation, as well as some of the clinical features of these growths. Dr. White says: "The close relation between the testicles and the accessory sexual glands—the prostate, Cowper's glands, and the seminal vesicles—naturally leads to speculation as to a possible connection of the overgrowth with the testicular changes coming on with advancing years. In addition to the function of producing spermatozoa, the testicles determine the development of the attributes of masculinity. When full adult life is reached this controlling influence probably ceases." From this the author concludes that "the disappearance of the necessity for a given product, without the coincident disappearance of the vital energy which was expended in producing it, might conceivably result in hypertrophy of organs intimately associated with those which were the source of supply."

The second part of the paper contains a review of the clinical evidence existing at the time the paper was written. One hundred and eleven cases, reported by sixty observers, are tabulated. Three cases, operated on by as many surgeons in different cities, are described in detail. Each of these was seen by several competent physicians, so that the reports cannot be questioned. These reports show the results of castration in appropriate cases, and also afford conclusive answers to the points that have been in dispute.

Of 102 cases contained in the table in which the condition of the prostate was noted before and after operation, 65 or 63.7 per cent, are reported as showing some distinct decrease in size, while in 24 additional cases, 89 in all (87 per cent), the improvement in other symptoms renders the conclusion justifiable that the prostate had become smaller. As will be seen by referring to the table, in most instances the shrinking of the prostate was both rapid and very marked, amounting in many cases to its practical disappearance. In two cases, in which autopsies have been made, microscopic examination of the prostate showed unmistakable evidence of atrophy, first of the glandular elements, and then of the stroma, identical with the changes Dr. White describes in his paper in 1893 as occurring in dogs.

In most of the tabulated cases the usual palliative measures are either stated to have been carried out, or such is implied. In many these have been most intelligently and faithfully persevered in for a long period and until the inability of such measures to afford relief had been demonstrated. That the beneficial results do not depend upon relief of congestion and œdema which follows rest in bed, as has been claimed, is shown by the failure of this very measure in some of the cases here reported, as well as by the evidence of actual atrophy of the prostate as seen microscopically.

The doubt expressed regarding the disappearance of the hyperplasia and the lack of accuracy in describing the size of the prostate, which the critics of the operation have complained of, have been robbed of their force, now that so many careful observers have placed themselves on record. It is impossible that all of them could have been mistaken.

In regard to the time of reporting the cases here recorded, over 71 per cent were observed more than three months after operation; in these "the local changes seem to have reached their culmination, and the health of the patients appeared to be permanently re-established.

The author believes that castration is to be preferred to suprapubic prostatectomy, which has been the operation of choice in advanced cases of prostatic hypertrophy for the following reasons: It has a lower mortality, the return to local and general health has been more complete and vastly more rapid than after prostatectomy, vesical contractility has been re-established, and pain and cystitis have disappeared, and the annoyance of a permanent fistula is avoided.

A number of observations, clinical and experimental, are recorded on unilateral castration, ligation and section of the vas, and ligation of the vascular structures of the cord. An effort was made to determine the respective merits of each, and their value, compared with castration, but the material was too limited to permit of definite conclusions.

The paper concludes with the following summary:

1. The functions of the testis, like that of the ovary, is twofold—the reproduction of the species, and the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testis and ovary in this respect does not disappear coincidentally, and that hypertrophies in closely allied organs, like the prostate and uterus, are the result of this misdirected energy. This hypothesis would increase the analogy between the fibromyomata of the uterus and the adenofibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

2. The theoretical objections which have been urged against the operation of double castration have been fully negated by clinical experience, which shows that in a very large proportion of cases (thus far in approxi-

mately 87.2 per cent) rapid atrophy of the prostatic enlargement follows the operation; and that disappearance or great lessening in degree of long-standing cystitis (52 per cent); more or less return of vesical contractility (66 per cent); amelioration of the most troublesome symptoms (83 per cent); and a return to local conditions not very far removed from normal (46.4 per cent.) may be expected in a considerable number of cases.

3. The deaths have been 20 in 111 cases, a percentage of 18. But of these there seems to be 13 that may fairly be excluded in an attempt to ascertain the legitimate mortality in patients operated upon under surgically favorable conditions, *i. e.*, before the actual onset of uræmia, or, better, before the kidneys have become disorganized by the two factors rarely absent in advanced cases, backward pressure and infection. This would leave a mortality of 7.1 per cent, which will probably be decreased as advancing knowledge permits of a better selection of cases. It is important to note that even in the desperate cases which make up this series of the deaths, 15 (75 per cent) showed improvement of symptoms or shrinkage of the prostate before they died.

4. Comparison with other operative procedures seem to justify the statement that, apart from the sentimental objections of aged persons on the one hand, and the real, entirely natural, and very strong repugnance to the operation felt by younger patients, castration offers a better prospect of permanent return to nearly normal conditions than does any other method of treatment. The relatively greater improvement in successful cases should be considered, as well as the mortality, in comparing the operation with the various forms of prostatomy and prostatectomy. So, too, should the absence of any risk of permanent fistules, peritoneal or suprapubic, the ease and quickness with which the operation can be performed, and the possibility of avoiding altogether the use of anæsthetics, which, in these cases, are in themselves dangerous.

5. The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases, at least, it has resulted in a very marked improvement of symptoms. It is worthy of further investigation.

6. My experiments on dogs have shown in nearly every case in which the vas deferens was tied or divided on both sides, that, without much change in the testicles, there were beginning atrophy and considerable loss of weight of the prostate. These experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the inclusion or severance of small but important nerves may account for the effect on the prostate.

7. Ligation of the vascular constituents of the cord, or the whole cord, produces atrophy of the prostate, but in my experiments only after first causing disorganization of the testis.—*The American Journal of the Medical Sciences.*

SOCIETY PROCEEDINGS.

Medical Society of the State of New York.

The ninetieth annual meeting was held January 28th, 29th and 30th, in Jermain Hall, at Albany, commencing at 9:15 A. M. on the 28th, and ending at 1 P. M. on the 30th. Roswell Park, M. D., President.

FINAL CORRECTED PROGRAMME. Tuesday, January 28, 1896. Morning session. Call to order at 9:15 o'clock. President's Inaugural Address. Appointment of committees. Reports of standing committees and of special committees appointed at last meeting. Annual report of the State Board of Medical Examiners, representing the Medical Society of the State of New York. Executive business.

PAPERS. On Serum-therapy: Dr. E. H. Wilson, Hoagland Laboratory, Brooklyn. Water and its Relations to Disease: Dr. W. P. Mason, Troy (late of the Pasteur Institute, Paris). On Sepsis of the Newborn: Dr. M. A. Crockett, Buffalo. Discussion opened by Drs. Jacobi of New York, and Jewett of Brooklyn. The Question of Puerperal Self-infection: Dr. Charles Jewett, Brooklyn. A Medico-legal Note: Dr. A. Walter Suiter, Herkimer. Shall the State Attempt to Control Spread of Tubercular Disease? Dr. J. L. Heffron, Syracuse. Discussion opened by Drs. Jacobi of New York, and Z. T. Emery of Brooklyn.

Tuesday Afternoon Session. Call to order at 2:15 P. M. Discussion: On Early and Latent Syphilis in Infants and Young Children; opened by. 1. Dr. George T. Elliott, New York, Diagnosis and Treatment. 2. Dr. Ernest Wende, Buffalo, Pathology. 3. Dr. B. Sachs, New York, Nervous Manifestations. General discussion opened by Dr. L. D. Bulkley, New York. Discussion: Diseases of Intrauterine Life: (a) On the Part of the Mother: Dr. E. H. Grandin, New York. (b) On the Part of the Child: Dr. P. W. Van Peyma, Buffalo. General discussion opened by Dr. Polk, New York. Address: Medical Education of the Future: Dr. Charles W. Eliot, President of Harvard University. On Sloughing Fibroids Complicating Pregnancy: Dr. M. D. Mann, Buffalo. Discussion opened by Dr. Mundé, New York. The Equilibrium-function of the Ear: Dr. Gaylor P. Clark, Syracuse.

Tuesday Evening Session. Call to order at 7:30 P. M. Scorbutus in Infants: Dr. H. C. MacLean, Brooklyn. Treatment of Malignant Disease in So-called Cancer Institutions: Dr. Nathan Jacobson, Syracuse. Alcoholism and Public Health: Dr. H. R. Hopkins, Buffalo. On the Evolution of Pathology. Illustrated by lantern photographs of those who have developed the science, with illustrations from their works: Dr. J. H. Hunt, Brooklyn.

Wednesday, January 29, 1896. Morning Session at 9 A. M. Abdominal or Vaginal Cœliotomy, Which? Dr. J. W. Whitbeck, Rochester. Vaginal Hysterectomy without Ligations: Dr. W. E. Ford, Utica. Complications

in Abdominal Surgery Requiring Intestinal Anastomosis: Dr. Vander Veer, Albany. Some Rare Complications of Appendicitis: Dr. Herman Mynter, Buffalo. The Improved Cæsarean Section: Dr. J. Garrigues, New York. General discussion of above papers by Drs. Etheridge, of Chicago, Mann, of Buffalo, Wylie, Mundi, Boldt and Krug, of New York, and McNaughton, of Brooklyn. Treatment of Fractures of the Patella by Continuous Extension, without Confinement in Bed: Dr. J. D. Bryant, New York. Early Diagnosis of Tubercular Kidney: Dr. Willy Meyer, New York. The Symptoms and Diagnosis in the Indigestion of Starches: Dr. Reynold W. Wilcox, New York.

Wednesday Afternoon Session. Call to order at 2:15 P. M. Congenital Dislocation of the Hip, with exhibition of case successfully operated: Dr. T. Halsted Myer, New York. Heteroplasty with Celluloid to Cover Defects in the Skull: Dr. Willy Meyer, New York. Discussion: On the Present Status of the Surgery of the Brain; opened by Dr. E. D. Fisher, New York; Dr. M. A. Starr, New York; Dr. Seneca D. Powell, New York. Surgery of the Skull, Dr. B. Sachs, New York. Surgical Treatment of Epilepsy, Dr. Chas. L. Dana, New York. Craniotomy for Imbecility and Epilepsy, Dr. James W. Putnam, Buffalo; Dr. W. C. Krauss, Buffalo; Dr. George Woolsey, New York. Address: Irritation and Counter-irritation, Prof. Wm. Pepper, Philadelphia. Address: Deficient Excretion from Kidneys not Organically Diseased, in Some of the Disorders Peculiar to Women: Prof. James H. Etheridge, Chicago.

Wednesday Evening Session. In the Senate Chamber, 7:45 P. M. Anniversary Address by the President: On the Study of Pathology by Comparative Methods. To be followed by an informal reception in the State Library and inspection of the new medical department of the library. Annual dinner at the Kenmore Hotel at 9:30 P. M.

Thursday, January 30, 1896. Morning Session at 9:30 A. M. Reorganization of the Coroner System: Dr. W. G. Macdonald, Albany. Distinctive Features of Railroad Surgery: Dr. R. S. Harnden, Waverly. Discussion opened by Dr. C. S. Parkhill, Hornellsville. Diabetes and Acetonuria in Children: Dr. W. S. Cheesman, Auburn. Development of Muscular Atrophy on a Basis of Old Infantile Spinal Paralysis, a Favorable Type; Dr. W. Browning, Brooklyn. To be discussed by Drs. C. F. Barber, Brooklyn, and J. W. Putnam, Buffalo. Value of Animal Extracts in the Treatment of Nervous and Mental Diseases: Dr. Floyd S. Crego, Buffalo. On the Surgical Treatment of Retroversions and Retroflexions, with Special Reference to Vaginal Fixation: Dr. H. N. Vineberg, New York. Neuritis Complicating Dislocations of the Shoulder and Elbow: Dr. M. A. Veeder, Lyons. Treatment of Aspiration-pneumonia by Drainage by Inversion: Dr. W. W. Seymour, Troy. Difficult Perineal and Suprapubic Lithotomy: Dr. W. Hailes, Albany. Abscess of the Frontal Sinus: Dr. J. P. Crevering, Auburn. Discussion opened by Dr. T. H. Halsted, Syracuse.

Some Notes on Trachoma: Dr. M. L. Foster, New York. Tetanoid Hysteria: Dr. Grace Peckham-Murray, New York. Treatment of Œdema of the Lungs: Dr. Louis Faugères Bishop, New York. Treatment of Sciatica with Nitroglycerin: Dr. W. C. Krauss, Buffalo. Trephining for Injuries and Diseases of the Cranium: Dr. W. W. Seymour, Troy. Second Report on a Case of Functional Albuminuria: Dr. Eli H. Long, Buffalo.

OFFICERS AND COMMITTEES.

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In Memory of Dr. Thomas Beckett.

At a meeting of the Albany County Medical Society, held January 15, 1896, a committee was appointed to draw up suitable resolutions on the death of Dr. Beckett, and Dr. Skillicorn was requested to present, at the next regular meeting, an historical sketch of the life of the deceased. The society adopted the following resolutions :

Resolved, That we, the Albany County Medical Society, have learned, with deep feelings of sorrow, the loss of our esteemed brother, Dr. Thomas Beckett, a brave patriot, a worthy citizen, a tender father, an affectionate husband, who, by his unspotted and useful life, and his intellectual and professional endowment has graced and honored our profession. We are

profoundly impressed by those qualities of mind and character which inspired respect, confidence and affection, not only in his patients, but also in his fellow practitioners. We appreciate the strong sense of right and duty, the strict conscientiousness and love of truth, and the fearless independence of character that manifested itself in all his words and actions. We have a deep sense of the loss we have sustained, and we feel that by cherishing his memory and imitating his noble example we shall become qualified to fulfill our lives of usefulness and trust.

Resolved, That a copy of these resolutions be presented by the secretary to the family of the deceased, with the assurance of our sincere condolence and heartfelt sympathy, in this hour of their great loss and affliction.

Resolved, That a copy of this expression of our esteem be published in the daily papers, and also be spread on the minutes of the society.

JOHN H. SKILLICORN, M. D.

F. C. CURTIS, M. D.

LORENZO HALE, M. D.

J. THOMPSON, M. D.

J. MOORE, M. D.

The Practice of Medicine by Druggists.—The French court has confirmed the sentence of a druggist who was fined 125 francs for practising medicine without a license. The druggist simply prescribed the application of compresses of a two per cent solution of carbolic acid. Surely our druggists live under a much more liberal regime than those of Paris.—*Medical Record*.

M. Bertillon Outdone.—The various means used by the police in their hunt for criminals appears to be distanced by that employed lately in Germany to capture a fugitive spouse. The wife of a rich manufacturer at Essen abandoned the conjugal roof and it was discovered had taken a train for Pecs, in Hungary; whereupon the husband telegraphed to the chief of police of that town as follows: "Arrest a woman who will be found on the train at Pecs. Description: Weight, 83 kilogrammes exact." Upon repairing to the train with this "exact description" the chief was somewhat disconcerted at discovering that all the women on the train were rather portly. However, he had them all weighed in the baggage room and only one weighed 83 kilogrammes exactly. This proved to be the fugitive, and the *Journal de Medicine de Paris* adds that this shows the importance of knowing the exact weight of one's wife, especially if she be somewhat "flighty."—*The Journal*.

Rivals of the Doctor.—A French physician figures out in *La Medecine Moderne* that the doctor is lucky if he sees one sick person in five, and that, as things now go, of all human beings doctors will soon be those who will see the fewest sick people. What with the strong-minded individual who does not believe in doctors, but “knows it all” himself; the mother, grandmother, and mother-in-law, each of whom doctors all the children, big and little; the water, faith, mind and other “curists”; the volunteer, who has an “infallible remedy” for every ailing friend and acquaintance; and finally, the prescribing druggist—it is doubtful if even one in five of the sick reach the doctor’s office or ever send for him. He concludes that “the medical profession, which certainly ranks far above many other callings, is in reality a very inferior one in regard to material things, and from this point of view many trades necessitating manual labor often soar far above it. If we want a coat we cannot do without the tailor, nor without the shoemaker for a pair of boots; yet in that which appertains to the art of healing any ignoramus can be a formidable rival to us; so that not only have we, in the race of life, come to struggle against other medical men, but also against a multitude of individuals with various crotchets who enrich themselves by filching the fees out of our very pockets.”—*The Journal*.

The Warm Bath as a Diagnostic Measure.—Richardson (Asclepiad, vol. VI, No. 43, p. 268) calls attention to the use of the warm bath in the diagnosis of diseased conditions of the abdominal cavity. The water of the bath is brought up to the natural temperature of the body, and the patient is allowed to recline in the water with all parts immersed, except the face and head, for a quarter of an hour before the examination commences. By that time the skin has become flaccid and the parts beneath, especially the abdomen, are more readily felt through the abdominal walls. The method is applicable not only to emaciated subjects but also to the obese.—*Medical News*.

Gold Mines in Cemeteries.—A writer in *Le Temps*, of Paris, has been traveling in America, and, of course, relates his “impressions.” What struck him particularly was not the falls of Niagara, the inquisitiveness of reporters, or the consumption of pie, but the fillings of American teeth. He has consulted the statisticians and finds that the amount of gold annually pounded into our dental cavities reaches the respectable figure of 800 kilogrammes, representing a half a million dollars. All this precious metal is buried with the Yankees when they die, and consequently at the end of three short centuries the cemeteries of the United States will contain gold to the value of \$150,000,000. He thinks this will prove too tempting to the practical mind of the future American, and foresees the day when companies will be organized to mine the cemeteries and recover the gold secreted in the jaws of deceased ancestors.—*Medical Record*.

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HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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ANNOUNCEMENT FOR 1896.

The growth in the circulation of the ALBANY MEDICAL ANNALS during the past year has been so rapid that the management is obliged to materially augment the number of copies issued during the coming year.

To meet this flattering increase in the subscription list, the committee decided to materially enlarge also the size of the page of the ANNALS, in order that the subscribers might have a greater amount of interesting news, and also to give them a better journal, and one more worthy of our ancient burg; and this without any increase in the subscription price.

When, however, this number was set up, the size seemed inconvenient and bulky, and after deliberation it is now decided to retain the old size of page, but to add to the usefulness of the ANNALS by making it a forty page journal instead of a thirty-two page one as heretofore.

It is owing to these changes in the ANNALS which have only lately been decided upon, that the appearance of the January number has been delayed. Hereafter our subscribers may expect a forty page journal, promptly issued.

When the present management took hold of the ANNALS five years ago, it was a twenty-four page magazine, and this second increase in the size of the journal is a matter of pride to the management, and an evidence of the appreciation of the worth of the ANNALS by the physicians of our own and neighboring states.

ANNOTATIONS.

The Riverside Baths.—Since the opening of the Riverside baths in New York city in last February over 4500 baths have been taken, including 1250 Turkish baths and over 1230 hydriatic treatments. The baths are open daily throughout the year, and have attached a free library and free reading room, a kindergarten and play ground for little children. The success of the institution is in no small measure due to the energy and personal interest of the chairman of the Bath Committee, Dr. Simon Baruch. The fees are nominal, ranging from three to twenty-five cents, and provision is made for those unable to pay.—*Medical News.*

How Austria Deals with Drunkards.—Austria proposes to deal with persistent drunkards by treating them as mentally incapable, and detaining them in special retreats for a term of two years. They may go in of their own accord or on compulsion, but cannot leave at will until their term has expired, except in certain cases on probation. Persons may be sent to the retreat either by order of the magistrate or on the petition of the parents or children, or of the husband and wife, or trustees, or of the chief of a lunatic asylum in which a drunkard may be detained. Inebriates may further be assigned to retreats by the action of the public prosecutor, or by the mayor of the town or village in which the habitual drunkard resides. In all cases the inebriate must be legally tried and convicted, the court being bound to hear witnesses, including the drunkard himself, as well as the doctors, more especially experts on mental diseases. The term of detention will be generally for two years, but the patient may be released on leave after one year, but will be confined again in case he relapses into his former bad habits.

The Mortality of Diphtheria Under the Antitoxine Treatment.—Welch (Bulletin of the Johns Hopkins Hospital, vol. VI, Nos. 52, 53, p. 97) has collected from all accessible sources 7166 cases of diphtheria treated with the antitoxin, showing a mortality of 17.3 per cent, as compared with an estimated mortality of 42.1 in cases treated previously or simultaneously without the antitoxin. In 648 cases treated with the antitoxin in which tracheotomy was performed, the mortality was 39.8 per cent; in 342 in which intubation was practised the mortality was 28.9 per cent; in 26 in which intubation was followed by tracheotomy the mortality was 53.8 per cent; in 211 cases in which it is not stated whether tracheotomy or intubation was practised the mortality was 40.2 per cent. The estimated mortality in cases treated simultaneously or previously without the antitoxin was 64.5 per cent after tracheotomy and 62.4 per cent. after intubation—*Medical News*.

The Police and the Bicycle.—Paris journals state that the chief of police is going to arrest all women promenading the streets, who are wearing the divided skirt. If mounted upon a bicycle the lady is safe, but the moment she gets upon the pavement she is liable to arrest. This sensitiveness of the French mind to the attire of the bicycle lady is almost pathological.—*Medical Record*.

Acute Yellow Atrophy of the Liver.—Several attempts have been made to assign a micro-organism as the cause of acute yellow atrophy of the liver; for a considerable period the results were always declared to be negative, but recently Dr. Kanot read a paper before the Medical Society of London, stating that in three cases of this disease—two of which proved fatal—he was able to isolate from the blood and liver the bacillus coli communis. Dr. M. H. Vincent (*Gazette Medicale de Paris*) also obtained a

similar result in a case which he investigated, and was able to isolate the organism not only from the blood of the liver but also from the bile, all the other viscera and the nervous system. The patient had died forty-eight hours after the onset of symptoms; the case was a typical one of acute yellow atrophy of the liver, and after death the usual pathological conditions were found. Microscopic examination of the liver demonstrated the presence in large numbers of the bacillus coli communis, and pure cultures were obtained without difficulty. The bacillus presented certain characteristics not usually ascribed to it. It was actively mobile. The cultures on gelatine (tube cultures and plate cultures) were neither opaque nor confluent, but, on the contrary, were translucent and discrete. The streak yielded by potato cultivations was light yellow in color, and projected very slightly above the cultivating surface. Lactic acid fermentation could only be obtained in a very small degree and in bouillon; in indol reaction was developed.—*The Epitome of Medicine*.

How Doctors' Fees are Collected in France.—Dr. C. had attended a "young person" who was recommended to him by a Mr. D. Failing to receive his fee from either the "young person" or Mr. D., he wrote to the wife of the latter stating the circumstances and advising that she see the bill paid to avoid scandal. Receiving no reply, Dr. C. sued for the amount of his bill, 420 francs; and Mr. D. sued the doctor for 5000 francs for betraying a professional secret. The court decided that the doctor was entitled to 300 francs instead of 420, and decreed that it be paid by Mr. D. On the other hand, the judge ordered the doctor to pay 300 francs to Mr. D. for violation of professional secrecy and grave inattention to his duties as a physician. The costs were divided equally.—*The Journal*.

An Important Early Sign of Tabes.—*The Boston Medical and Surgical Journal*, for August 29th, publishes a letter from Dr. James J. Putnam, of Boston, who says that a number of years ago, while trying the effect of hyperflexion of the legs for the relief of pain in tabes, he observed that it was frequently possible to flex the leg at the hip, without bending it at the knee, so far that it would almost touch the ear without exciting the painful sense of popliteal tension which is so speedily felt by a person in health.

Since then, he says, he has once seen a brief reference to this fact, but he has never seen the sign described in the text-books nor commented on at any length.

He states, however, that he has convinced himself that it is not only an interesting feature of advanced cases of the disease, but that it may help one out at an early stage where the diagnosis is doubtful. He has recently seen the case of a gentleman, who presents no other signs of tabes beyond the presence of characteristic pains which have followed him for the past three years. The knee-jerks are both present, though one is less marked

than the other, and the same may be said of the reactions of the pupils to light. The patient has been seen by an eminent physician of New York, who assured him that he had not tabes, and although Dr. Putnam thought the diagnosis could be made with confidence, yet, he says, he felt strengthened in this opinion by the presence of the sign referred to.

So far as he can now judge, the degree to which the hyperflexion is possible without exciting pain is proportionate rather to the pain than to any other symptom, and is not proportionate to the ataxia. The sign, says Dr. Putnam, is certainly one which deserves study, though it is not invariably present.—*New York Medical Journal*.

The Dean of Norwich on Doctors' Bills.—The ancient city of Norwich, in England, is a pleasant place in which many good people have lived—eminent divines, masterful surgeons, noted linguists, and handsome women—and though many have gone from there, to the gain of other places, there are still not a few remaining. Among the best of them is the present dean of Norwich, who combines with other good qualities a just appreciation of the value of medical services. In his sermon at the cathedral Hospital Sunday he delivered a eulogy upon the physician and his work of charity among his fellows. This is perhaps not particularly worthy of notice, for we are frequently told on public occasions how good we are, and usually must rest satisfied with this patronizing approval; but the dean is a practical man and one who believes that the laborer is worthy of his hire, and he told his people in plain words that they must pay their doctors for work done. His remarks concerning doctors' bills, says the *British Medical Journal*, should be widely read, for they deserve the attention of many whose position in the world is undisputed, who stand well with their neighbors, and are looked upon as honest men, but nevertheless relegate the payment of their doctors' bills to the dim and distant future. The dean is reported as having said: "Nor can I, nor shall I, be silent about the wrongs to which scores of medical men are subject. I refer to the startling contrast there is between the inexorable demands which society makes on medical men and the elasticity of the social conscience with respect to their remuneration. I have known cases where men are summoned, at all hours, and at all seasons of the year. Their bills are presented with timidity, if not anxiety, and they are received sometimes with amazement, sometimes with indignation, and sometimes relegated to oblivion. Nor are cases unknown where the righteous demand for work done is met by calling in another practitioner, he in turn to suffer as his brother did before him. I cannot permit myself to imagine that I address any such wrongdoer here to-day. But if I do, then, in my Master's name, I entreat you to remember that the medical men of this nation are the highest type of their class in the world; they are entrusted with the secrets of domestic life; they have all our liabilities, with the special liabilities of their order; they frequently die as martyrs to

science, to suffering, to sympathy, to destitution. * * * Believing this, my plea is that every unpaid medical bill be discharged generously, gratefully, cheerfully, and that whatever account must be deferred in payment, the last to be deferred is the account of him who is the human agent who has brought us into the world, enables us to continue our work in life, and many a time lays down his own in endeavoring to battle death."—*Medical Record*.

Wrapping Paper for Articles of Food.—The city of Montpelier is said to be the first in France to adopt regulations concerning the kind of paper to be used for wrapping up articles of food. By a municipal decree, in force for some months, the use of colored paper is absolutely forbidden. Printed paper and old manuscript may only be used for dried vegetables, roots and tubers. For other articles of food, new paper either white or straw-colored must be used.—*The Journal*.

Poisoning by Stale Eggs.—Cameron (*Dublin Medical Journal*, October, 1895, p. 311) has reported the occurrence of vomiting and purging in seventy-four nuns and girl pupils in the boarding-school attached to a convent in Limerick, following a dinner at which mutton and a custard composed of eggs, milk, corn flour and sugar were eaten. The corn flour was supposed to contain arsenic, but analysis showed it to be free from poison of any kind and to be of good quality. The sugar also proved to be pure. No other constituents of the meal could be obtained. The vomit and the stools were intensely green from the presence of ordinary poison. The viscera of two patients that had succumbed also were examined, but no poison was found. Ptomaines were found present, but in small quantity. The milk used had been boiled, and the meat was above suspicion. The eggs, however, were not fresh, and one presented a reddish-brown color, and was thought to be bad. Some of the custard given pigs induced severe diarrhoea. Reference is made to an earlier case of poisoning by stale eggs.

Diagnosis of Diphtheria.—Thure Hellstrom (*Hygiea*, vol. lvii, No. 9) maintains that the clinical picture of a paryngeal affection does not, in the majority of cases, permit of establishing a positive diagnosis, but that bacteriological examination may be relied on. Of 1881 patients admitted to the new epidemic hospital at Stockholm, from September, 1893, to August, 1895, with diphtheria or suspected diphtheria, the Loeffler bacillus was present in 1304 (69.32 per cent) while 537 (30.68 per cent) were free from it. In consequence of this the authorities omitted every measure of disinfection in the latter cases. In order to establish an absolutely certain diagnosis, Hellstrom made cultivations upon unmixed ox-serum, a simple and speedy method. He states that the presence of very small cocci is a good prognosis, while streptococci with diphtheria bacilli make the prognosis worse. Hellstrom claims to have proved that the long and slender bacilli are the real cause of true diphtheria, while the short and thick ones are of subordinate importance.

Of 694 scarlatinal patients examined, the Loeffler bacillus could be detected in only 53 (1.95 per cent). Convalescents, however, in whom the bacillus appears in later stages are dangerous, as true diphtheria contagion can be disseminated by them. Hellstrom never found the diphtheria bacilli to be the cause of phlegmonous angina. In the majority of cases of croup diphtheritic infection is the real cause, but cases of croup occur which are not engendered by the Loeffler bacillus, but by cocci which, though infectious, warrant a favorable prognosis. In 17 cases of scarlet fever with croup in the later stages, and in numerous cases of measles with croup diphtheritic origin was demonstrated in all but two cases, where only cocci could be found. The author mentions that, out of 15 tracheotomies for scarlatinous croup 11 died, and, in 31 tracheotomies for croup after measles 28 died.

The presence of the Loeffler bacillus in the throat of apparently healthy persons, who become immediately affected by true diphtheria, seems to prove that they are the real originators of the disease, and the author mentions several examples in which such seemingly healthy persons spread the contagion. From a great many observations he maintains that it is not the rule that in the lighter cases the bacilli pass away more rapidly than in the severe ones, but on the contrary, bacilli surviving a long time after uncommonly light cases have shown a permanent virulence. It is also undoubted that in the severe cases the mucous membrane of the throat sooner ceases to be a fruitful field for the growth.—*The Universal Medical Journal*.

Antitoxin Treatment of Diphtheria.—Thure Hellstrom (*Hygiea*, vol. 1vii, No 10) reports the result of the treatment of 358 cases of diphtheria in the new hospital at Stockholm, from February 1, to August 1, 1895, in 164 of which antitoxin was used. Of the total number, 209 cases occurred in children under 10 years of age, of which 7 died, (1.96 per cent. mortality). There were 52 cases of croup, 31 of which, all under 10 years, were tracheotomized, with 3 deaths. The other 4 deaths occurred during the first forty-eight hours in the hospital, and, if these be deducted the mortality is 0.85 per cent. of the whole number and 1.46 per cent. among those below 10 years. Of those treated with serum, albumin appeared in 68 cases (31.57 per cent.); and, among 142 not so treated traces were observed in 11 and larger quantities in 17 cases.

Hellstrom believes that well prepared serum does not effect the kidneys, and that such disorders during serum treatment must be ascribed to the influence of the diphtheria virus. The paralysis so often observed during and after diphtheria is neither less frequent nor changed in character under the serum treatment. In 2 of the cases mentioned the carbolic acid employed in the preparation of the serum was perhaps, the cause of death.—*The Universal Medical Journal*.

Examination of the Urine for Sugar.—Luxenburgh describes a case showing how important it is to note the time of day as well as the condition under which urine is taken for examination. A boy of 16 years had had for the previous eight months an increase in the quantity of his urine as well as appetite and thirst, and, at the same time, general debility. Examination of the daily quantity was made, and the specific gravity was found to be 1.304, with 6.1 per cent. of sugar. Milk diet was prescribed. On the morning of the third day afterward on an empty stomach, his urine was discharged in the presence of the author, was found to be 1.011 specific gravity, and contained no sugar. The same was the case at noon, four hours after taking a glass of milk; but at 2 o'clock the urine again contained sugar, which disappeared entirely at 7.30 p. m. Further observation showed that the sugar was constantly present in the morning urine and absent in the evening. Mistakes may thus arise from the examination of only portions of the urine, and not that of the whole day.—*The Universal Medical Journal*.

A Concentrated Antitoxin has been produced by the New York Board of Health. Whereas the serum prepared by Behring and designated by him as Nos. 1, 2 and 3, contained respectively 60, 100, and 150 antitoxin-units per cubic centimetre, the department is now ready to dispense what it will indicate as No. 4, with a strength of 200 antitoxin units to the cubic centimetre, No. 5 representing 300, and No. 6, 400. In using these it will be necessary, of course, to reduce the dosage in accordance with the increased potency of the new products.—*The Medical News*.

A New Director of the Pathological Institute of the State Hospitals for the Insane.—The State commission in Lunacy has appointed Dr. Ira Van Gieson, of New York, to the position of Director of the Pathological Institute of the State Hospitals for the Insane, which has been recently been established. Dr. Van Gieson was selected after a special competitive civil service examination, which embraced a series of questions in general pathology, minute and pathological anatomy of the nervous system, technique and methods of neural investigation, and the lines of research to be applied to the study of the pathology of insanity. The laboratory which is to be maintained for the benefit of all the State hospitals, will be conducted on a scale which has hitherto not been undertaken by any State or country, the aim of the commission being to provide for an exhaustive study of all the morbid conditions that underlie mental diseases from the standpoint of cellular biology, which is now elevated to the dignity of a special science; also to provide instruction in brain-pathology and allied subjects for the medical officers of the State hospitals. Official bulletins representing the progress of the laboratory and clinical work of the State hospitals will be issued quarterly.—*The Medical News*.

A Hypnotic Free from Cardiac Disturbance.—It will be generally conceded that the effect of a remedy depends to a great extent upon its dosage and manner of administration as established by a large number of clinical investigations. If therefore, disappointment is expressed from the use of any remedy in cases where one would be led to expect a favorable result, it is well for the physician to ask himself whether an incorrect dosage or method of employment is not responsible for the failure. This applies particularly to the use of hypnotics, and is well illustrated in the case of Sulfonal. If care is exercised to give this drug in an abundance of fluids as tea, milk or soups, and in proper dosage, the proportion of failure will be infinitesimal. On the other hand, the employment of excessive doses for long periods without occasional interruptions, may give rise to unpleasant symptoms, as in the case of other neurotic drugs. As is demonstrated by an immense number of observations, Sulfonal if correctly used is a perfectly safe and efficient remedy. Schaumann (Annual of the University Medical Sciences, 1895) "Finds that this drug exercises no influence on nutrition, the destruction of albumin remaining perfectly normal during its administration. It is, therefore, superior in this respect to chloral hydrate, to say nothing of the injurious effect of the latter drug upon the heart and vessels." H. Schedtler (Eibid) "Submitted forty-one female patients suffering from mental diseases to continuous treatment by Sulfonal. Daily doses of from 1 to 2 gms. (15½ to 31 grains) caused no untoward symptoms, even when continued for a long time without interruptions." The author found these doses sufficient to produce sleep or to calm excitement, especially in cases of melancholia with excitement, while if larger doses are employed continuously he considers it desirable to interrupt the use of the drug from time to time.

Elimination of Uric Acid Gravel.—There is a large class of patients who after any indiscretion in diet, indulgence in alcoholic beverages, or exposure to cold and wet, are attacked by vague pains in different parts of the body, especially a dull heavy pain in the kidney regions, associated with the passage of high colored, scanty urine. Aside from these symptoms, there are usually present constipation and the condition known as "Biliousness". The patients attacked in this manner are usually subjects of the so-called uric acid diathesis, and the rheumatic pains in the limbs and the dull aching in the region of the kidney are probably due to the imperfect elimination of uric acid from the system. The indications for treatment are to relieve the constipation and congestion of the liver and abdominal viscera by the use of cholagogue cathartics, and the adoption of measures to aid in the elimination of the morbid material by the kidneys. For this purpose the liberal administration of plain or mineral waters is highly desirable, this serving to dilute the urine and to flush out the kidneys. In connection with this measure some drug should be administered which will keep the

uric acid in solution, and also dissolve concretions of this substance in the kidneys. Among the remedies recommended, Lycetol is destined to occupy a prominent place, for it combines the acknowledged uric solvent properties of Piperazine with those of an alkaline tartrate. It is pleasant to the taste and therefore easy of administration and its employment in cases of the above described type is promptly followed by a copious elimination of uric gravel and rapid improvement in the symptoms. The employment of Lycetol should be continued for some time, however, for in this way it is only possible to exert any lasting influence upon the morbid condition. It is a fortunate fact that this remedy is entirely devoid of irritating effects upon the gastro-intestinal tract and therefore well adapted for prolonged administration.

A Batch of Suppositories that "Went Wrong".—A colleague who lives in Vermont lately prescribed some glycerin suppositories for a gentleman, with the direction "Use as directed". What happened is thus told by the patient in a letter: "I inclose you a sample of a pill I have been taking until they nearly killed me. It is a prescription you gave me for the rheumatism last time I was there. I took about ten of these "What do you call them?". They each waited for the other, and after a big dose of physic congregated and, in a large ball, managed to escape."—*N. Y. Med. Journal.*

ANNOUNCEMENT OF NEW BOOKS.

Dont's for Consumptives, or the Scientific Management of Pulmonary Tuberculosis is the title of a book which, under the authorship of Dr. Charles Wilson Ingraham, will soon (about Feb. 10th) be issued by the Medical Publishing Co. of Rochester, N. Y.

The complete work of 35 chapters is devoted exclusively to the general management of Pulmonary invalids, no reference whatever being made to drug treatments.

The object of the author is to supply the physician with a practical work, and at the same time, by eliminating technical terms, reduce the text within the easy comprehension of the intelligent patient. The author claims that "a good understanding of his condition is the best remedy for the consumptive". With this book in the hands of his patient the physician will be relieved of a multitude of details which attach to the successful management of such cases. Special attention has been given those chapters pertaining to the destruction of tubercular infection.

The book will be printed on 72-pound antique book paper, bound in cloth (imitation morocco), with title in gold leaf. Price, \$1.75.

APPENDICITIS.

P. BLAKISTON, & Co., of Philadelphia, announce a book on "APPENDICITIS," by John B. Deaver, M. D., Assistant Surgeon to the German Hospital, etc. The book will be arranged in a practical and systematic manner. The History, Etiology, Symptoms, Diagnosis, Operative Treatment, Prognosis, and Complications of this disease will be given in order named. It will contain about forty illustrations of methods of procedure in operating, and typical pathological conditions of the Appendix, the latter being printed in colors.

Simons's Clinical Diagnosis—In Press.

A Manual of Clinical Diagnosis by Microscopical and Chemical Methods. For Students, Hospital Physicians and Practitioners. By CHARLES E. SIMON, M. D., Late Resident Physician John Hopkins Hospital, Baltimore. In one handsome octave volume, richly illustrated.

The art of Diagnosis, necessarily underlying rational treatment, has developed largely from the use of instruments and methods of precision. The microscope and many forms of chemical and physical apparatus are now applied directly to diagnosis with the effect of rendering the practice of medicine and surgery continually more certain in beneficent results. Dr. Simon's forthcoming volume treats fully of the latest and most approved methods developed by American and foreign research and presents them in a form available for every-day use. The work will be richly illustrated, colors being used wherever important discriminations can be aided thereby.

LEA BROTHERS & CO., Publishers, 706, 708 & 710 Sanson Street, Philadelphia. 111 Fifth Avenue (Cor. 18th St.), New York.

THE NUMBER OF PHYSICIANS IN THE DIFFERENT STATES IN THE UNITED STATES AND CANADA IN 1895.

Maine, 1,321; New Hampshire, 802; Vermont, 699; Massachusetts, 4,075; Rhode Island, 595; Connecticut, 1,287; New York, 10,385; New Jersey, 1,855; Pennsylvania, 8,199; Delaware, 245; Ohio, 7,456; Indiana, 5,389; Illinois, 7,188; Michigan, 4,115; Wisconsin, 2,084; Minnesota, 1,417; Iowa, 3,916; Nebraska, 1,584; Kansas, 2,777; Arkansas, 2,046; Missouri, 5,589; California, 3,058; Colorado, 1,014; Nevada, 51; Oregon, 629; Dist. of Columbia; 669; Maryland, 2,141; Virginia, 1,932; West Virginia, 1,465; North Carolina, 1,477; South Carolina, 1,136; Georgia, 2,154; Florida, 766; Kentucky, 3,248; Tennessee, 3,555; Alabama, 1,934; Mississippi, 1,462; Louisiana, 1,150; Texas, 4,169; Arizona, 82; North Dakota, 236; South Dakota, 463; Idaho, 116; Indian Territory, 313; Montana, 252; New Mexico Territory, 105; Utah Territory, 255; Washington, 656; Wyoming Territory, 59; Oklahoma, 219; Alaska, 7; Canada, 4,599. Total, 112,366.

READING NOTICES.

Observations on the Treatment of Infantile Diarrhoea by Means of Tannigen.

By DR. RICHARD DREWS, HAMBURG, SPECIALIST FOR DISEASES OF CHILDREN.

The action of tannin upon mucous membranes has long been known; under this action they become more firm and are shriveled by the diminution of the inter-cellular fluids and by a stronger molecular cohesion. Dr. Lewin has made a study of the action of tannin upon albumin. Tannin precipitates albumin, but the coagulum thus formed is easily dissolved under the influence of an excess of albumin or under the influence of alkaline carbonates. Peptone is also precipitated, but the amount of hydrochloric acid in the gastric juice is sufficient to dissolve this coagulum. It is for this reason that tannin is unable to alter the peptones in the presence of free hydrochloric acid; the remainder of the albumin assumes the state of tannic albumin and is digested, that is to say, the albumin is peptonized, and the decomposed tannin, which can no longer precipitate it, is directly taken up by the fluids of the body where it becomes a tannic alkali.

The intestinal reaction is simpler still; the tannic albumin is decomposed by the intestinal alkali; and the tannin, having entered the circulation as a tannic alkali becomes efficacious in the tissues, wherein the action of the free acid neutralizes that of the alkali.

The action of tannin upon mucous membranes is very often utilized in therapeutics against certain morbid affections: Catarrhs of the conjunctiva of the ear and nose, and against tonsillar hypertrophy. Loiseau praises the results of insufflations of tannin in diphtheria, and Trousseau strongly recommends tannin in œdema of the glottis, of whatever origin. Woillez, Duboue, and other authors vaunt the astringent, antiputrid and antibacterial action of tannin.

But the excellent effects of tannin in external application are entirely lost in its administration internally; for example, if we wish to combat catarrhal affections of the intestine. Tannin produces within the stomach precipitates that are only soluble in an excess of albumin; such a surplus of albumin is not ordinarily found in the stomach in sufficient quantities to act when large doses of tannin are given. The mucous membrane of the stomach is then attacked; anorexia, gastric pain with weakness and even vomiting accompanying the action of tannin upon the intestinal mucous membrane. There is a bad taste in the mouth, deglutition is painful, and the tannin is dissolved and so rapidly decomposed that Dr. Moiner, even after the administration of 8 grammes of tannin, was unable to find the tannin reaction in the stools, and only found 0.1 gramme of gallic acid in the urine.

In the treatment of affections of the mucous membranes of the small and large intestine, astringents must answer to two conditions. They must neither dissolve in the mouth nor in the stomach, and in the intestine they must dissolve and decompose gradually, so that not only the upper part of the intestine, but also the membrane of the colon, may be reached by the effects of the remedy.

In order to avoid these inconveniences of tannin, Prof. Meyer of Marbourg experimented with ethereal solutions of tannin which remained insoluble within

the stomach and were only gradually dissolved in the intestines, and has discovered a derivative of tannin.

Prof. Meyer has called this preparation Tannigen. The Farbenfabriken of Elberfeld, formerly Friedrich Bayer & Co., prepare it in large quantity. Tannigen is a very fine powder, of a yellowish gray color, odorless and tasteless, which stands a heat of 180.0°C , and only begins to liquefy at a temperature of $187\text{--}190.0^{\circ}\text{C}$. In water at 50.0°C , it becomes transformed into a honey-like mass. In dilute acids and cold water it is but scantily soluble, in ether and boiling water it dissolves but slightly, while in cold alcohol and dilute solutions of phosphate of sodium, borax and soda, it dissolves readily, assuming a yellowish color. By continuous boiling in alkaline solutions or by exposure of several days in the cold the compound is saponified and divides into acetic and gallic acids. Tannigen gives with the salt of oxide of iron, the color reaction of tannin. A slightly alkaline solution containing sodium phosphate precipitates lime and albumin; it has an astringent taste, arrests the glandular secretion of the mucous membranes of the frog, and especially presents all the characters of an astringent. The addition of an alkali, or of borax, dissolves the precipitates of lime and albumin.

Experiments with Tannigen in rabbits and cats have shown that the powder passes over the mucous membrane of the mouth and stomach without exerting any appreciable influence—for example, without disturbing the appetite, even in a dose of several grammes—and that in the intestine, it is decomposed by the alkaline reaction into acetate of potash and tannin, which lessens the secretion and causes a thickening of the excrements. The Tannigen is dissolved and its action is so gradually produced that in cats, even after relatively small doses of 0.3 gramme an appreciable amount of the substance may be detected in the stools, while in no part of the intestines is there produced a sufficiently intense action to cause erosions. In the urine gallic acid appears only after larger doses, but no unaltered tannin or Tannigen.

Dr. Muller has employed Tannigen in doses of 3-4 grammes a day, and 0.2-0.5 gramme a dose, three times a day, in chronic enteritis, repeated dysenteries and tubercular diarrhoea with very great success. In most cases after treatment by Tannigen the number of stools were lessened on the following day, and the stools were less liquid. In a case of repeated dysentery, Dr. Muller was unable to find Tannigen or a derivative in the stools, even after doses of three grammes of the drug.

Dr. Kunkler of Bonn has made, since a year, some experiments with Tannigen in 25 children suffering from diarrhoea, with entire success. During the first day of the enteritis Dr. Kunkler gave calomel simultaneously, or in most of the children, naphthalin, in order to disinfect the intestines, and he recommends continuing the Tannigen for several days after the purely catarrhal symptoms have disappeared, as a precaution against irritations of the intestine and in order to prevent relapses.

I have used Tannigen since a year in very favorable cases of diarrhoea in a large number of children and with very good success.

Infantile diarrhoeas vary greatly. In children at the breast the diarrhoea is sometimes green and sometimes yellow, and is due, during the first months, most usually to a biliary hypersecretion, as is shown by examination, which reveals an intense biliary reaction. The number of stools vary between four and ten, and

there are no other symptoms of dyspepsia, no vomiting. This green diarrhœa is not microbic. In these cases the child takes too much milk, either because he nurses too often, or because he suckles from a nurse having abundant and strong milk, frequently not appropriate to its age; or else the diarrhœa, persisting after the regulation of the nursing, is due to defects in the chemical digestion, whose nature is uncertain, and which results simply from the fact that the nurse's milk is not adequate to the child's digestive power (Saint Phillipe). At times there exist fever and nocturnal agitation. The only indication is to moderate a too abundant secretion, to prevent dietetic errors, to calm the nervous state and perhaps to attenuate a reflex. In these cases the first indication naturally is to regulate the nursing, but, as a remedy, I have employed Tannigen with success in doses of 0.2 to 0.3 grammes three or four times a day. Since Tannigen is altogether without taste or odor, all the children without exception have taken it willingly, and in no case, even in the very youngest children, has the powder shown any unfavorable effect upon the appetite or has troubled the gastric functions; hence I was able to give it even to children at the breast successfully and without pain. I gave it, since it is nearly insoluble, in a spoonful of water or milk, or of milk soup. I never observed vomiting after the admixture of Tannigen with milk. In the two or three following days the stools were modified, becoming less numerous and less liquid, and in five or six days the child was cured.

In bottle-fed children diarrhœa shows itself under three principal forms.

Sometimes it is a pure lenteria with stools yellow and sometimes stained with green at the surface, with a strong odor of fermentation and even of anatomical maceration. Lenteria exists alone without dyspepsia or vomiting.

Sometimes it is a fatty diarrhœa. The milk is coagulated by the acidity of the stomach, but the casein is not rendered assimilable and the fat is not modified by reason of disturbances of the hepatic and pancreatic secretions; thus the stools appear as if formed of fatty granulations of coagulated casein. This diarrhœa is often due to the taking of too large amounts of milk. Children of two, three and four months often take a litre and more of cow's milk daily, when breast-fed children only reach a similar amount, according to the estimates of Bouchut and Tarnier, at the eighth or ninth month of their existence. In other cases, finally, the stools assume a purely green color of "chopped boiled grass" under the influence of a faulty nursing bottle or of impure milk. This is the true green bacillary diarrhœa, with an alkaline reaction, in which Dr. Lesage believes he has found a special pigment secreted by the pathogenic bacillus.

Against these three forms of diarrhœa, lenteria, fatty diarrhœa and green bacillary diarrhœa, I have also used Tannigen with much success without employing any other antiseptic remedy. Tannigen, which is decomposed in the intestines by the alkaline reaction into acetic acid and tannin, acts through the astringent, antiputrid and antibacterial properties of tannin. The latter lessens the secretion of the intestinal mucous membrane, regulates the hepatic and pancreatic secretions, and acts against the putrid masses which fill the intestine, and kills the bacteria. Lewin of Berlin was able, by the addition of tannin, to prevent decomposition for some time in putrid sanguinous solutions, which he kept in open vessels. After four or five days the stools are lessened in number and they no longer are so liquid and fetid. Tannigen proves, in many cases of green

and even bacillary diarrhœa, more efficacious than lactic acid, which Dr. Lesage has recommended as an antiseptic specific against the bacillus at fault.

But whenever the number of stools become greater than ten or fifteen a day, when dyspepsia also appears and vomiting occurs, when the diarrhœa becomes a choleric form enteritis, we can no longer depend upon Tannigen alone; under such serious circumstances prompt intervention is needed and the milk must be stopped for some days. This is to be replaced by iced and alcoholized drinks or alcoholized infusions with revulsive measures, such as baths at 30.0C (86 F) lasting for ten minutes and followed by wrapping the child in woolen blankets. The intestines should be cleaned out with calomel even in the youngest children, in doses proportionate to their age. Or else chloroform may be used.

Chloroform	0.5-1.0 oz.	M vi ss—xv.
Aquæ Destil.	100 oz.	iii.
Aquæ Menthol.	50-100 oz.	Tss—oz. iii.
M. Sig. 1 drachm every 2-3 hours.		

Simultaneously with the calomel or the chloroform mixture I have given in several cases of infantile cholera, at the beginning, Tannigen three or four times a day, and I believe that this treatment is valuable. But the Tannigen must be persisted with for some days after the stools have become normal and the milk diet has been resumed. Especially during convalescence Tannigen proves more efficacious than the tincture rhubarb, hydrochloric acid, paregoric or even laudanum, owing to the astringent and microbicidal action of the tannin.

In children that have already been weaned, diarrhœa takes on distinct forms that are worth remembering. The cause of this diarrhœa is commonly a poor alimentation, with intense heat that disturbs the stomach and disposes it to suffer from catarrh, and that modifies the salivary, gastric and intestinal secretions, changes them into deleterious substances which are harmful to the digestive system, and into dangerous toxines which affect the whole organism. Children ten to thirteen months old are often fed with eggs, fish, meat, etc., and the stools show the harmful effects of such dietetic errors.

Enteritis soon appears with mucous, glairy and even bloody stools, with fever, insomnia and cerebral irritation, which parents commonly ascribe to phenomena of dentition; there is also a loss of weight. In such cases the diet must be reformed from the beginning; all solid food is to be excluded and an absolute milk diet enforced. As to treatment, I have formerly given calomel, castor oil, salicylate of bismuth or naphthol and creosote; but Tannigen in doses of 0.05 to 0.3, according to age, acts better than all these. Since Tannigen is inoffensive we might give, without harm, larger doses of the powder than this, but the amounts I have given have proved sufficient, in the majority of cases, to give favorable results. After four or five days' treatment the stools are no longer so mucous or serious; then we may give a little veal broth with milk or alone, and gradually work up to the diet which is appropriate to the age of the child. But in those cases of diarrhœa it is proper to give Tannigen four or five days after all symptoms have disappeared, for fear of irritations of the mucous membrane of the intestine and to prevent relapses.

In conclusion, Tannigen is an excellent remedy in infantile diarrhœas; it cures the diarrhœas of various kinds in a short time, by the astringent, antiputrid and antibacterial action of the tannin; besides, it possesses, over most other

remedies, the advantage of being tasteless and odorless, it does not disturb the functions of the stomach and proves harmless even after prolonged use.

“Moreover, the physician, in order to check or to cure diarrhœa in the child,” writes Dr. Saint-Phillipe, “must not treat it by a simple astringent potion, but must base his judgment upon the age of the child, upon the nature of its alimentation, upon kindred matters, and must base it especially upon a careful study of the stools, whose character must now more than ever before be determined with certainty.”

Dr. Austin Flint said that “*prevention* belonged to the higher branch of Therapeutics,” and in no cases is this therapeutic agent of more value in the fulfillment of its duties than in Ophthalmia Neonatorum. The fact that 30 per cent. of the blind in British institutions have lost their sight from this cause attests to its virulence. Of 50,000 in the United States 10,000 were made so by this disease. Its cause is usually infection from the maternal passages during or shortly after birth. The Crede treatment (cleansing the eyes at birth and instilling into each a drop of 2 per cent. solution of nitrate of silver) is a very valuable prophylactic, but not a popular one on account of the inflammatory reaction occasioned. What would be as efficacious and free from the drawbacks of the silver solution, would be a solution of BORINE one part in ten of water. It is a thorough *germicide* and *prophylactic*, *non-toxic*, and so *non-irritating* that the delicate epithelium is not harmed. In conjunctivitis and granular lids it will relieve the burning sensation. BATTLE & Co., St. Louis:

Some time ago you sent me specimens of your preparations of Bromidia, Papine and Iodia. Unlike many who send out specimens, you send an amount large enough to really make a trial with. I had used the two first named a little, but having them more forcibly brought to mind, and recognizing the fact that I had them on trial, I watched their action more carefully. I can say that they are both elegant and health bearing. Bromidia I used on a man verging on mania a potu, Papine on a nervous typhoid woman, and Iodia on a young man, who had carried boils for three years as the result of ivy poisoning. The preparations were a decided success in every instance.

Yours truly,

E. C. ADAMS, M. D.

Watertown, S. D., Dec. 10, 1895.

“PRACTICAL DIETETICS.” By W. Gilman Thompson, M. D., Professor of Materia Medica, Therapeutics and Clinical Medicine in the University of the City of New York, Visiting Physician to the Presbyterian and Bellevue Hospitals, etc. Diastase is a vegetable ferment which has the property of converting starchy foods into a soluble material called maltose. Like the ferments in the saliva and pancreatic juice, it acts in alkaline solution, but unlike them, it continues to operate in acid media and, therefore, its action is not disturbed by the gastric juice. Diastase is a peculiar substance which causes the ripening of fruits and vegetables by converting their starches into dextrins and sugars; hence fruit becomes more and more digestible as it ripens.

Maltine is made from three cereals—barley, wheat and oats. *It is rich in diastase.* It may be taken either plain, with cod liver oil, with coca wine, with pancreatin, with hypophosphites, etc., in tuberculosis and other diseases.

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Photographing the Unseen.

BY HOWARD VAN RENSSELAER, PH. B., M. D.,

Associate Professor of Materia Medica, and Lecturer on General Medicine
in the Albany Medical College.

When the discovery was first made that images of visible objects could be caught and fixed upon a sensitized plate, the process being called photography, it probably did not excite a tenth of the interest and amazement among scientific men that followed the announcement by Professor William Conrad Roentgen of Wurzburg university, Austria, a few weeks ago, that he had discovered that it was possible for certain rays to penetrate many opaque objects; and that the image of the unseen could be developed and shown upon an ordinary photographic plate.

Wonderful, indeed, it seems that transparent substances like clear glass are opaque to these rays, while dense materials like flesh, paper and wood, permit the rays to pass more or less readily through them.

Almost at the very beginning investigators found that these rays did not obey the rules which govern white light, in that they could not be focused or dispersed, nor could they be reflected nor refracted by ordinary methods; nor were they capable of deviation by strong magnets, as are the cathode rays, but that they are entirely anomalous and peculiar to themselves.

The word photography in connection with them is also a misnomer, as the rays themselves are invisible and cannot be considered light in any ordinary acceptation of the term, and instead of a true picture of the object, its shadow simply is thrown upon the plate.

The course of the rays, called by the discoverer X rays, was traced by means of a fluorescent screen, and their penetration of opaque objects demonstrated by placing organic bodies before this screen.

Professor Roentgen's original investigation was made with a Crooke's tube, which is an irregularly shaped vessel or tube of thin glass, through the walls of which are hermetically sealed electrodes of platinum; the tubes are then exhausted of air, to less than a millionth of an atmosphere, affording the nearest approach to a perfect vacuum that has ever been produced.

Through this tube an electric current from a powerful Ruhmkorff coil is passed, which develops at the cathode or negative pole a faint, bluish light, which throws upon the glass surface a brilliant phosphorescence. The rays of light from the cathode to the walls of the glass are called the cathode rays.

The so-called X rays, as they are named by the discoverer, which are invisible, appear to proceed from the phosphorescence on the inner walls of the tube, or better still, through an aluminum window let into the tube.

These X rays, while they resemble the cathode rays in many respects, are not identical with them, as the latter are visible and can be deviated by a magnet, while the former are invisible and cannot be turned aside from their course by any known agent. When a screen which may exhibit phosphorescence is interposed in front of these X rays, its surface will appear luminous.

In his first experiment, the Crooke's tube was enveloped in black paper, and then the florescent screen was placed near it; the screen became at once luminous, showing that the invisible rays had penetrated the black paper. A book of a thousand pages was then interposed between the tube and the screen, but the luminosity continued; a block of wood, and a sheet of aluminum were experimented on with like result; a sheet of iron, however, intercepted the rays, showing that certain substances only permitted these rays to pass, while others were opaque to it.

When the living hand was placed in front of the screen a very curious result was observed. It was found that a shadow of its osseous skeleton was obtained on the luminous surface, and that the image of a ring that was on one of the fingers was particularly sharp and distinct.

The next experiment was to ascertain what effect, if any, these newly discovered rays would produce upon a photographer's plate. That a shadow would be impressed upon the sensitized film, which could be developed by the ordinary methods, he already knew; as some time ago Hertz had demonstrated that these rays, though passing through glass with difficulty, would readily permeate a window of aluminum if inserted in the tube in place of the glass, and would excite phosphorescence on a suitable screen, and chemical action

on certain salts; and again, Lenard, two years ago, by means of the Crooke's tube, had obtained shadowgraphs on photographic plates.

The feature that was peculiar to Roentgen's experiments, and the only fact new to science was, that bony structures are impenetrable to these rays, while flesh is nearly transparent.

It was this startling and sensational fact that a living person's bones could be photographed, that stirred the public mind, and aroused so wide spread an interest among the members of the medical profession. The public papers, scientific magazines and especially medical journals have since teemed with the results obtained by many experimenters. In a general way the results so far to the medical profession are as follows:

That in the thinner portions of the body, as the hands, arms and feet, it is possible to establish the shape and location of foreign bodies, as bullets, metals and glass that lie buried in the soft tissues and concealed from the eye, provided that they are not covered by the bony structures; that fractures, dislocations, exostoses and some pathological alterations of the bones can also be recognized.

This is as far as our knowledge has advanced as yet. That we shall ever be able to view lesions or even foreign bodies within the brain seems improbable, on account of the opacity of the bones of the cranium which obstructs these rays.

All the soft tissues so far examined seem equally translucent, and no attempt to demonstrate pathological alterations of the soft tissues or organs, within the body or in the laboratory, have been successful.

So, as yet, its application to the medical profession is strictly limited within narrow bounds; but there has been opened a limitless field for research and experiment in many directions. Perhaps special plates prepared with fluorescent or other substances may be discovered that will lessen the time of exposure, which is now from many minutes to two hours, and may perhaps bring out details in the picture which now are lost in the uniform darkness of a silhouette.

The non-refractability of the rays prevent our focussing them, so that many of the outlines are still indistinct, and it is impossible to make a reduced image, the shadow being practically of the same size as the object. Possibly these objections may be overcome.

Undoubtedly in the near future physicists will invent improved, cheaper and simpler apparatus for more accurate scientific research. The physiologist, it is hoped, may then elucidate ways of measuring the gradations of the permeability of the rays through all animal tissues. When this occurs the clinician may be able to use these methods for more accurate diagnosis; and it is even within the bounds

of possibility that the pathologist may employ these rays to modify the action of diseased tissues; though at the present the few experiments that have been made in this direction are not encouraging, as bacteria, which have had prolonged exposure to the action of these rays, are uninfluenced by them; and the living human eye, when interposed in the direct path of the X rays, is not cognizant of any effect of light, or of heat, or of pain, or, in fact, of any sensation.

Already many prophecies have been made of what we may hope and reasonably expect from these newly discovered rays, but they are at present but mere speculation, and, from the point of pure science, we are still on the threshold of the great unknown, and it is impossible now to predict what the result will be.

Histological Anatomy of the Kidney.

BY S. G. SHANKS, M. D.

The kidney is a compound tubular gland by which water, certain salts and waste products are separated from the blood, and excreted. Abnormal substances in the blood are likewise, in a great measure, removed by the kidneys.

A kidney, in radial section, shows two distinctly marked portions, an external or cortical portion composed of interlacing convoluted tubules, dotted rather uniformly with small, spherical malpighian corpuscles, and divided at intervals by radiating bundles of straight tubules and vessels—the medullary rays. The medulla or inner portion of the kidney presents a striated appearance, due to closely packed straight tubules and vessels, which converge toward the pelvis.

A single renal element consists of a tubule of considerable length, composed of strong basement membrane, lined with a single layer of nucleated epithelium which varies in different portions of the tubule. A single tubule performs all the functions of a complete kidney.

A tubule begins in the cortex as a globular dilatation, Bowman's capsule, inclosing a tuft of blood vessels, the glomerulus. Bowman's capsule (1-200 inch diam.) is composed of a strong hyaline membrane lined with a layer of nucleated squamous epithelium. The glomerulus is a 4 to 8 lobuled network of capillary arteries, covered with a reflection of the basement membrane and squamous epithelium which lines the capsule. The glomerulus is nowhere attached to the capsule except at the point of entrance. The cavity of the capsule varies according to the amount of fluid present.

The malpighian bodies are largest near the medullary border and become smaller near the external portion of the cortex. With the cessation of embryonic life no new glomeruli are developed. In the growth of the kidney or in compensative hypertrophy, the glomeruli increase in size and the tubules in length and calibre.

The cavity of Bowman's capsule opens into the tubule through a narrow neck at a pole opposite to that of the entrance of the blood vessel. The tubule quickly enlarges to about 1-500 inch diameter, and follows a very tortuous course, but leading toward the nearest medullary ray, into which it enters.

The calibre of this convoluted tubule is wide, the lining cells are large, cubical and granular, nucleated and distinctly fibrillated or rodlike next the investing membrane. A border of motionless cilia has been discovered on these cells in man and some typical lower animals.

In the medullary ray the tubule becomes nearly straight, calibre and epithelium remaining unchanged, and passes down to the medullary border, where it suddenly narrows to about 1-2000 inch diameter, and becomes more transparent; continuing down into the medulla a certain distance, it turns sharply back and passes up with the ray into the cortex again. The slender descending limb of this loop—Henle's loop—is lined with clear flattened cells, each with a prominent spherical nucleus, which causes the cell to project inward. The result is a narrow spiral or undulating bore. The return or ascending limb of the loop is somewhat larger, and is lined with rodlike, cubical cells, each having a flattened nucleus.

In the cortex, the tubule, irregular in size, follows the ray a short distance, then leaves it and becomes markedly convoluted again, winding among the other convoluted tubules; the lining cells are similar to those of the first or proximal convoluted portion, the bore or lumen is very narrow. Again approaching the medullary ray it leads into a short connecting tubule lined with low, transparent columnar cells, thence into a straight collecting tubule lined with low, transparent nucleated cells and having a wider bore. The collecting tubule becomes larger as it receives the connecting tubules and passes directly down into the medulla discharging at the apex of a papilla. The tubules are held together with a barely discernible amount of connective tissue, which principally surrounds the capillary blood vessels, forming a delicate vascular stroma.

The whole gland is enclosed in a loosely adherent capsule of somewhat laminated, elastic, fibrous tissue. Small bundles of fibres from this renal capsule pass into the external portion of the cortex with the vessels.

The amount of blood passing through the kidney is large. The renal artery, as large as the brachial, enters at the hilum, breaks up into small trunks which enter the renal tissue at the junction of cortex and medulla. The cortex is much more vascular than the medulla. Interlobular arteries pass upward from the renal trunks and radiate between the medullary rays, giving off on all sides short curved branches, *afferent arteries*, which lead directly to the malpighian bodies and form the glomeruli. The diminished ends of the interlobular arteries break up into capillaries among the more externally lying convoluted tubules.

The *efferent* or leading out arteries, from the glomeruli, split into capillaries among contiguous convoluted tubules and medullary rays, and form a continuous network among the cortical tubules.

The medulla is mainly supplied by straight intertubular arteries—*vasa recta*—given off from the renal trunks. A limited supply of blood reaches the medulla from some of the lower lying *efferent* vessels and from the capillaries following the medullary rays.

The vessels which return the blood from the arterial capillaries are venous in structure, but carry arterial blood. As a rule they accompany the arterial trunks and branches. In the outer portion of the cortex the capillaries empty through radiating vessels into larger trunks—*vena stellata*—which in turn communicate with the interlobular veins. In the medulla the return venous vessels much exceed the arteries in number and calibre. Huxley says of the renal circulation:

Normally the walls of the renal vessels are relaxed and the blood passes very freely. As the blood comes directly from the aorta, and has but shortly left the lungs and heart, it is free from CO₂ but not from urea. Urine contains less oxygen and more CO₂ than arterial blood; hence so long as the kidneys are healthy, the blood which leaves them is as bright a scarlet as that which enters, and really the purest blood in the body, because it contains less urea and water than before.

Renal nerves enter at the hilum and are distributed throughout the cortex in the form of an open network. The glomeruli are surrounded by a wide meshed plexus of fibres having terminal knobs lying close to the capsules. Lymphatics accompany the blood vessel.

The pelvis of the kidney is a pouch-like expansion of the ureter and possesses the same longitudinal and transverse layers of involuntary muscle, and is lined with stratified, transitional epithelium similar to that of the bladder and ureter.

Physiology of the Kidney.

Normal urine is yellowish or amber in color, perfectly transparent and free from viscosity. The *spec. grav.* is about 1020, nearly that of

blood serum (1028). The average daily adult quantity is about fifty-one ounces. The reaction is, as a rule, acid, due to the presence of acid salts, which may vary according to the character of the food.

Observations on a case of ex-trophy of the bladder showed that the functions of each kidney were equal in quantity of fluid and amount of urea and phosphoric acid excreted. The minimum amount of urine was excreted between the hours of 3 and 4 A. M. The maximum varied, acidity was marked during the night, feeble during the morning and variable during the afternoon. Quinke states that in healthy subjects the quantity of urine passed during the night, as compared with the day, is as 1 to 2, or even 1 to 4, while in pathological states it is as 2 to 1 and the solids increase accordingly.

Heidenhain injected a two-grain solution of indigo carmine into the ext. jugular vein of a dog. After a few minutes the animal was killed and the kidneys examined. The blue stain was found in the convoluted tubules and the ascending loops of Henle. After a copious injection and a longer time allowed for excretion, some of the glomeruli were found to be stained also. Egg albumen, Hæmoglobine and sugar similarly injected were found to be excreted by the glomeruli.

The most important function of the kidneys is the elimination of water and urea from the blood.

Urine contains about 96 per cent water which, with sodium chloride, sodium and potassium sulphates and the phosphates, are largely excreted by the glomeruli.

Urea is very soluble in water and is found normally in the blood (0.0177 per cent.) in lymph, chyle, sweat and in the substance of the liver. The daily amount eliminated is 350 to 450 grains. The amount of urea in the urine is increased by severe muscular or mental exertion and after the ingestion of richly albuminous foods. Alcohol, and to some extent tea and coffee, diminish the amount of urea under normal conditions. Uric acid and the urates are present in the urine to the amount of ten to twelve grains daily. Any very evident amount of uric salts are pathological.

The percentage of urea in the blood has been found to be diminished one half after passing through the kidney. Urea injected into the blood provokes prompt diuresis and is soon eliminated.

Animals will live four or five days after the removal of both kidneys, dying at last in coma and convulsions. The blood at first shows no abnormal amount of urea (the latter being largely voided in the fluids ejected from the stomach and intestine), but towards the end of life it is found in large quantity.

There are some discordant views relating to the mechanism of the elimination of urea by the kidneys. Senator and others claim that urea is formed by the cells of the tubules, which are aroused into action when the contents of the blood in urea yielding substances reach a certain limit. His conclusions are the result of laboratory experiments, involving mutilation of the animals and kidneys, which at once make the conditions decidedly abnormal.

Physiologists generally agree, that urea is decidedly excrementitious and is not found in the kidney, but exists in the blood, largely as a result of tissue waste, and is separated with a portion of the inorganic salts, by the cells of the convoluted tubules and ascending loops of Henle.

Winternitz, after a series of carefully conducted experiments, with reagents sensitive to 1 to 2 parts of albumen in 100,000 of urine, claims that the presence of albumen in any quantity is not characteristic of normal urine.

The relatively capacious return vessels in the renal medulla would seem to indicate some reabsorption of water from the collecting tubules in the pappillæ.

Lesions of the spinal cord at the sixth, fifth or fourth cervical vertebra will cause albuminuria. Lesions at the third or fourth cervical vertebra may cause temporary arrest of renal excretion.

The most important inorganic salts in the urine are: Na Cl, is eliminated to the amount of about 154 grains daily, largely dependent upon the quantity ingested; Chlorides are present in the urine of children in a high proportion. In nearly all acute febrile disorders the chlorides rapidly diminish, rising to the standard during convalescence.

Potassium and sodium sulphates exist in about equal quantities—twenty-two to thirty-seven grains each daily. Phosphates exist in variety and are derived partly from the food and partly from tissue waste. Reduced to phosphoric acid equals about fifty-six grains daily.

Normal urine always contains a small amount of mucus, some epithelium and a few leucocytes.

Vomiting of Pregnancy.—A writer in *Lancet* (London) says; “I have not failed once for many years, by a single vesication over the fourth and fifth dorsal vertebrae, to put an end at once to the sickness of pregnancy for the whole remaining period of gestation, no matter at what stage I was consulted. The neuralgic toothache and pruritis prurienti of the puerperal condition yielded as readily, and to one application.”—*The Medical Age*.

Medical Society of the State of New York.

Ninetieth Annual Meeting, held at Albany, January 28, 29, and 30, 1896.

The titles of the articles read at this interesting meeting were given in the January number of the ANNALS and will not be reproduced here. The present article simply records the transactions of the Society.

President's Inaugural Address.—The President, Dr. Roswell Park of Buffalo, read his inaugural address of which the following is a resume.—

He congratulated the society on the unusually bright prospects of the society.

Attention was called to a recently organized World's Congress of Climatology to which State Medical Societies were requested to appoint delegates; the first meeting to be held at San Antonio, Texas. Dr. Curtis of New York City has been appointed delegate to this Congress.

The Index Medicus, the success of which all physicians had at heart, was to continue, on which the profession was to be congratulated.

The medical department of the State Medical Library was constantly growing in importance. An appropriation for its support of five thousand dollars was secured from the legislature last year, with a considerable degree of difficulty, and it was to be hoped that a like appropriation could be obtained yearly.

Representations from incorporated medical societies, as the by-laws now stood, was liable to abuse.

It was very advisable to resume former relations between this society and the American Medical Association and all judicious means towards this end should be promptly instituted; that the opposition to this was now continued for a few individuals only.

The president recommended a change of meeting place for the annual meets of the society, saying that there were many arguments in favor of selecting New York City in preference to the capital of the state; he also thought that meetings should also be held from time to time in the western part of the state.

The new law relating to the compulsory instruction on narcotics and alcohol in our public schools throughout the state, should be radically changed or repealed.

Laws should be enacted whereby the profession should have better protection against malpractice suits as nearly all were unjust.

The coroner system should be revised.

There was a growing tendency on the part of the State Commission in Lunacy to assume all responsibility and secure centralization of all power of management of institutions in the state. The personnel of

the commission was liable to be changed at any time, and as no one knew of whom it might be composed it became evident that great abuses might creep in. If it obtained the power sought it would have the direction of the expenditure of four or five million dollars.

After the president's address was finished, Dr. Lucien Howe moved that the recommendations contained in the address be referred to a committee of five. Dr. Howe was then appointed by the president as chairman of the committee.

Reports. Dr. F. C. Curtis of Albany, the secretary, in his report read a list of newly made permanent members, as follows: Charles O. Baker, Auburn; Silas J. Banker, Fort Edward; David A. Barnum, Cassville, Oneida county; Guy C. Bagley, Poughkeepsie; Joseph B. Bissell, New York; Reed B. Bontecou, Troy; William A. Burgess, Utica; Walter F. Chappell, New York; Lewis A. Coffin, New York; James A. Cooley, Glen Cove; Newton F. Curtis, White Plains; Alexander Dallas, New York; S. L. Dawes, Saugerties; Theodore Dunham, New York; Henry S. Durand, Rochester; Daniel C. Dye, Utica; Elmon E. Elliatt, Catskill; Arthur Lyman Fisk, New York; John A. Fordyce, New York; Herman C. Gordenier, Troy; Joseph B. Hulett, Middletown; James Edward Kelly, New York; Judson G. Kilbourn, Utica; Henry C. McLean, Brooklyn; William A. Moore, Binghamton; John Maroney, Elmira; John W. Morris, Troy; William J. Morton, New York; J. M. Mosher, Ogdensburg; Thaddeus H. Myers, New York; W. O. Plympton, New York; Julius B. Ransom, Dannemora; DeWitt C. Rodenhurst, Philadelphia, Jefferson county; Leander Swartwout, Prospect; T. Oliver Tait, Rochester; C. F. Timmerman, Amsterdam; W. K. Townsend, New York; C. A. Van Ramdohr, New York; David B. Ward, Poughkeepsie; G. T. Wetmore, New York; Charles Mason, Peekskill; Edward L. Mooney, Syracuse; H. J. Boldt, New York.

The treasurer, Dr. Porter, reported that there was a balance in the treasury of over twenty-two hundred dollars.

By-laws. The committee on by-laws recommended that there should be one delegate only from incorporated societies, and that the membership of which should be 15 at least.

The committee on ethics reported that no complaint had been brought before them this year.

Prize Essay. The Committee on prizes reported that but one essay of value had been received. It was on diseases of the stomach. The prize was awarded to the author, Dr. A. L. Benedict, of Buffalo, N. Y.

Duties of Nurses in Case of Ophthalmia Neonatorum. The report of this committee was read by Dr. Lucien Howe. The Committee had

called the attention of midwives and others to the existence of the present law for the prevention of blindness. It was recommended that the law of 1891 be made more definite. The matter was referred to the committee on legislation.

To Regulate Midwifery. Dr. M. D. Mann brought up the question of county examinations of midwives, and a special committee was appointed to draft a bill similar to that which had applied to Erie county since 1885.

The Report of the Committee on Hygiene. This committee in opposition to the bill condemning sale of all ice cut from rivers was adopted.

Report of the Committee on Legislation. Dr. Morris J. Lewi read the report; one portion of it, he said, was a compromise. It recommended that students entering medical colleges be allowed one year in which to fulfil their academic requirements for admission. Dr. A. Jacobi opposed this part of the report and on motion it was stricken from the report.

Report of the State Board of Medical Examiners.—Dr. Morris J. Lewi of New York, read the report. During the year there had been 603 examinations, 8 before the eclectic board, 63 before the homeopathic board, 582 before this board. Licenses granted, 482; rejected, 171. The eclectics rejected 1, or twelve per cent; homeopaths 8, or twelve per cent. State board 162, or twenty-seven per cent. Many states had passed laws based on ours. Most state boards accepted a license granted by the New York State board. It would be highly desirable if other States would adopt as high a standard as this, in order that licenses granted by them could be accepted here.

Since the last report most of the colleges in New York City had extended their course to four years, and soon, doubtless, this would be true of all colleges in the State. The report was received and adopted.

Report of Committee on President's Address. Dr. Lucien Howe, chairman of the committee, read the report. It approved of the appropriation by the State of \$5,000 to the Medical Library, and recommended this amount as an annual appropriation.

It recommended a "travelling library," also efforts to establish harmony between this society and the American Medical Association; and that a special committee on expert testimony be appointed by the president. These recommendations of the committee were adopted. A long discussion took place on the question of holding meetings in Buffalo, N. Y., and elsewhere, and finally the matter was laid on the table.

Expert Testimony. The committee on expert testimony reported through Dr. Ransom in favor of legislation directing the appointment of experts by courts, their duties to be advisory, and their reports to be made to the court, etc.

The report was adopted and the committee on legislation instructed to make efforts to secure the desired legislation.

Work of Health Boards Endorsed. Dr. Van Cott, of Brooklyn, recited the benefits to the public of the work of health boards regarding vaccination, infectious diseases, etc., and yet, he said, there had been suits brought against physicians for doing their duty. He offered resolutions approving of work of the boards. Adopted.

Regulation of Cancer Institutions, &c. Dr. L. D. Bulkley offered the following which was adopted:

Whereas, Serious results have often resulted to the people and profession from the existence and operation of private medical institutions for the treatment of cancer and other diseases:

Resolved, That the committee on legislation be directed to secure, if possible, the passage of a bill by the legislature placing all such institutions under the care of the State Board of Health, in the same manner in which all private institutions for the care of the insane are under the care of the State Commission in Lunacy.

Alcohol and Narcotics. Dr. A. W. Suiter offered the following which was adopted:

Whereas, This society is ever mindful of the evil results to individuals and to the community of the abuses of stimulants and narcotics, and is ever ready to co-operate with and encourage intelligent efforts to prevent such abuses, and

Whereas, This society is familiar with the recent attempt to force upon our public school system the task of teaching our children the chemistry, the toxicology, and the pathology of alcoholic stimulants and narcotic habits, and

Whereas, The society is in entire sympathy with the probable motives of the promoters of this law, but has profound consideration of its inexpediency, therefore

Resolved, That the committee on legislation is hereby instructed to bring about the repeal or essential modification of the law relating to this subject.

Index Medicus. Dr. Mile, of Brooklyn, offered a resolution, favoring the publication of the Index Medicus by the national government. Carried.

Committee on Nominating Members of State Board of Medical Examiners. The president appointed Drs. F. C. Curtis, James D. Spencer, Charles Jewett, D. L. Bulkley, N. Jacobson.

This committee recommended Drs. Fowler, of Brooklyn, and Wey, of Elmira; alternates, A. Walter Suiter and Willy Meyer.

Report of Nominating Committee. For President, Dr. James D. Spencer, of Watertown; Vice-President, Dr. L. D. Bulkley, New York; Secretary, Dr. F. C. Curtis; Treasurer, Dr. C. H. Porter; Committee of Arrangements, Dr. W. J. Nellis, Dr. W. Hailes, Dr. R. J. Wilcox; Committee on By Laws, Dr. H. D. Wey, Dr. W. J. Harri-man, Dr. F. C. Curtis; Committee on Hygiene, Dr. H. R. Hopkins, Dr. L. S. Pilcher, Dr. Daniel Lewis, Dr. W. G. McDonald, Dr. O. W. Peck, Dr. Lucien Howe, Dr. A. M. Campbell; Committee on Legisla-tion, Dr. A. W. Suiter, Dr. M. J. Lewi, Dr. J. M. Winfield; Com-mittee on Ethics, Dr. Charles Jewitt, D. Eugene Beach, Dr. J. F. Heffron; Committee on Prize Essays, Dr. A. Jacobi, Dr. Henry Hun, Dr. M. F. Cheesman; Committee on Publication, Dr. F. C. Curtis, Dr. F. D. Bailey, Dr. M. D. Mann, Dr. C. H. Porter; Delegates to the State and other Societies: to British Medical Association, Dr. C. L. Dana, Dr. M. A. Starr, Dr. J. P. Boyd, Dr. J. P. Bigelow; to Cana-dian Medical Association, Dr. A. B. Miller, Dr. C. L. Parkhill, Dr. T. S. C. Van Allen, Dr. G. M. M. Combes, Dr. W. Phillips, Dr. E. H. Bridges, Dr. E. I. Mooney, Dr. P. Collard; to Ontario Medical Asso-ciation, Dr. M. D. Mann, Dr. Roswell Park, Dr. F. S. Crego, Dr. N. Jacobson, Dr. J. O. Roe, Dr. T. O. Tait, Dr. M. A. Barney, Dr. G. H. Oliver, and a number of State societies. It was suggested that the secretary be empowered to add to the list of delegates. The report was signed by the following gentlemen of the nominating committee: Dr. M. D. Mann; 1st district, Dr. C. W. Townsend; 2d, Dr. Phil-ander Collard; 3d, Herman Bendell, 4th, Dr. Charles M. Lefler; 5th, Dr. W. A. Vincent; 6th, Dr. D. G. Burr; 7th, Dr. E. L. Mooney; 8th, Dr. F. S. Crego.

The report of the nominating committee was confirmed and all the nominees declared elected.

Reorganization of the Coroners' System. Dr. W. G. McDonald read this paper. The annual cost of the coroners' system to the State has been over three hundred thousand dollars. Its administration was incompetent. The German system was commenced. It consisted of a physician, a surgeon, and a judge for each of several districts.

Dr. Rudolph Witthaus reported for the special committee on coroners' system, acting with the committee on legislation and that of the State Bar Association. They hoped this winter to have a bill

passed, substituting for the present coroners' system one whereby a medical examiner is to be appointed by the Supreme Court for each of the several districts.

Hon. Tracy Becker, Albert Bach, and Herman Bender warmly advocated the proposed change, and a motion to continue the special committee and appoint an auxiliary committee of twenty-five or fifty was adopted.

The Non-Existence of Human Equality.—Dr. Forbes Winslow contends that under despotic forms of government suicide is much less prevalent than it is in countries governed on the principles of republicanism, which is another term for human equality (the *Annals of Hygiene*). Where the actions, thoughts, lives of human beings are controlled rather by others than by themselves, where the life of the masses is, so to speak, regulated by the logical intelligence of constituted authority rather than by the oftentimes erratic impulse of the individual, under such conditions (paradoxical as it may seem until explained) life is in itself more pleasant to the individual, and he is hence less anxious to terminate it. It seems to us logical to infer that each act of self-destruction must necessarily imply that the person so acting has no wish for a continued life, and it must be conceded that this frame of mind must be the outcome or the result of a life so lived that its living has no pleasure to the individual. Even an insane man will not kill himself if his insanity is a pleasure to him; the very act of self-destruction implies a determination to destroy a consciousness that is a constant or momentary source of discomfort. We assume as incontrovertible that no healthy person whose life, whose very living is a source of pleasure, ever committed suicide, ever wilfully sacrificed that which to him was a pleasant possession; and when we find self-destruction most prevalent among those whose lives are self-regulated, we are compelled to pause and ask whether each individual is capable of regulating his life, his methods of life, to the best advantage, to the attainment of the best ends of which his organism is capable. In his lecture on "Liberty of Man, Woman and Child," Col. Robert G. Ingersoll contends that thought is material, that thought is a brain product, as vegetables are products of the soil, and that each individual should harvest his mental crop and act in accordance with the dictates thereof. The idea is in accord with the theory of human equality; but it is not in accord with the teachings of biology or physiology, the student of which cannot logically believe in the equality of mankind. Nature plainly indicates that she intends that com-

paratively few shall lead the masses who are designed as followers. Grains from the same ear of corn planted, in the one instance, in the rich, fertile soil of Pennsylvania, and in the other instance, in the barren, sandy soil of lower Jersey, will germinate and produce crops in both localities, but how vastly will they differ; so the same exciting or inciting impression upon the brains of one thousand men will produce one thousand crops of thought, but how vastly will they differ, from the most logical to the depths of absurdity, from conservatism to socialism, from good citizenship to nihilism, from self-preservation to self-destruction. While, according to our constitution, man may be born free and equal in the eyes of the law, he is not free; is he not equal in the eyes of nature; he is born a slave to inherited tendencies, and he is born in all varying degrees of self-capacity. Did we but recognize the unquestionable fact that mentality is capable of development, not alone by books and by the help of others, but by exercise and use of the mental attributes born with each of us; did we each one of us recognize that we are not all equal in the eyes of nature, and did we each strive patiently to understand to properly estimate ourselves and to fit ourselves into the holes designed for us by nature, we would have very little anarchism; we would have much less self-destruction, and this world would be altogether a much more pleasant place to live in. Argue as we may, men are not all equal, physically and mentally; nor a woman either, and it is the direct and indirect and remote results of the assumption that they are, that make most of the trouble of the world.—*Medical Record*.

Medical Manners.—A very gratifying tendency has marked the development of the medical profession in the last generation. The slough of mannerisms, the formal dress, the owl-like solemnity, have been thrown off, and the physician, by his own choice, is being judged more by his appearances. Thirty years ago a bald head, a white beard and a long frock coat, were as much a part of the physician's equipment as his diploma. Now, on the other hand, it is no infrequent occurrence for an elderly man of real ability and modern in his methods of practice, to lose a patient through the fear that he may not be fully abreast of the times. What can be further from the old traditions than a leading surgeon lounging about in an outing shirt and blue belt, or a distinguished physician playing polo? Yet these amusements are simply a relaxation from the tension of professional study. One of the best indications that people are learning to judge their medical advisers by their merits is the fact that the advertising physicians are being driven to the wall, despite the most specious extrinsic evidences of success that the shrewdest business methods can produce.—*The Medical and Surgical Reporter*.

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ANNOTATIONS.

Resolutions Tending to Prevent the Spread of Contagious Diseases.—Drs. Biggs and Pruden have made to the New York City Board of Health the following report and recommendations, which were adopted at the last meeting. ¹

It has been for a long time well known that the expectoration of persons suffering from laryngeal or pulmonary tuberculosis (consumption) pneumonia, influenza or la grippe, and from diphtheria, contains the specific germs of those different diseases, and is capable of inducing those diseases in others.

There is furthermore, much evidence that a similar condition exists in certain more readily communicable diseases, such as scarlet fever, measles and whooping-cough.

In regard to some of these affections, the danger from the expectoration in public places is, of course, small as the patients are ordinarily confined to their homes during the infectious period. But this is not universally the case. It has long since been shown that the chief means for the transmission of the consumption is the dried and pulverized sputum of persons suffering from this disease.

Diphtheria, influenza and grip are easily communicated in this way during certain stages of the disease. Catarrhal affections may also be communicated through dry spittle mixed with dust.

“These germs are liable to be gathered on the feet and on the skirts of women and taken into private houses where the most perfect ventilation will not stay their effect.

“We believe that the time has now arrived when the people of the city of New York will heartily support the adoption of such sanitary

measures as may seem necessary and expedient for the abatement of this widespread nuisance and source of danger."

"We would recommend the following resolutions."

"Resolved, that notices be posted on all public places and in all surface and elevated cars in this city, signed by the Board of Health warning passengers against expectoration upon floors of these conveyances and, further, that similar notices be posted in the stations of the elevated roads, warning against the expectoration upon the platforms and stairs or on the floors of the stations.

"Resolved, that similar notices be posted in the halls and assembly rooms of all municipal and Federal buildings in the city.

"Resolved, that the municipal authorities be requested to provide sufficient and proper receptacles for expectoration in such public places as are in their control, and that the managers of the elevated roads be requested to provide similar receptacles sufficient in number for their stations and platforms, and that in all cases these receptacles shall be kept in a cleanly condition.

"Resolved, that the officers of the Manhattan Elevated Road be requested to give peremptory orders to their guards to restrain from and to prevent so far as possible, expectoration from trains into the streets, and to secure the enforcement of these orders."—*Medical News*.

Premature Occupation of New Houses; a Test for Relative Humidity of Habitable Apartments.—The sanitary writer for the European edition of the *Herald* treats of the disadvantages and dangers arising from dampness of the domicile. Regarding newly built houses he says, "Sanitarians, for the most part, teach us that a period of four months in summer and six in winter ought to be allowed between the end of the building operations and the entrance of the inhabitants in a house. In this way will be avoided the accidents that arise from the premature occupation of an apartment. It is scarcely necessary to add that as soon as the house has begun to be occupied, to avoid dampness it should be heated and ventilated, treated, in a word, by all the usual means to maintain a healthy condition of the apartment. If the dampness persists in spite of all these precautions, the proprietor is responsible for the defects in his building. Physicians are sometimes requested to estimate the relative dampness of an apartment or room. This is not always easy by simple inspection, as a room may be damp although saltpetre does not grow on its walls or mold in its corners. The following is an exact means of appreciation and one that is within everyone's scope: In the room in question a kilogram of fresh lime should be placed after hermetically closing doors and windows. In twenty-four hours it should be weighed, and if the kilogram has

absorbed more than ten grains of water (that is, more than 1 per cent), the room should be considered damp and classed as unhealthy. The question of dampness of dwellings is a frequent cause of dispute between landlord and tenant, naturally solved in the affirmative by the latter, and in the negative by the former. The question can be settled in the future by the test of the hydration of lime, of which I have just spoken, and which will give irrefutable proof or refutation of the validity of such complaint. The dampness of dwellings is a cause of illness. The death rate is greater in quarters where the apartments are damp than where they are dry. Ventilation is defective where the walls are impregnated with water; the porosity of the walls is done away with and can only be re-established after the evaporation of the water has been completed, and the heat required to effect this evaporation is furnished by the person living in the room. This is the cause of the vivid impression of cold which we experience in damp places, and it is a well known fact that exposure to the action of cold renders the organism more accessible to the attack of morbid germs. The rotting of walls which appears particularly in places where the water used in building contained nitrates and chlorides is caused by changes from dryness to dampness and *vice versa*. It gives rise to fragmentation of the mortar and even of the building stones themselves. Finally, frost can split a wall that is soaked in moisture.

“The dampness of dwellings is due to internal or external causes. There can be no doubt that a new building ought to be treated for a certain length of time by ventilation and heat with a view to evaporating the really enormous amount of water incorporated with the building materials. According to Pettenkofer, a three story house requiring 167,000 bricks would need some 835,000 liters of water to build. When this evaporation has been effected great care should be taken in insuring proper drainage for rain and other water.”—*The Journal of the American Medical Association*.

The Preservation of Organized Urinary Sediments.—It is often very desirable for purposes of instruction or demonstration and for comparison at different times in the course of a case of nephritis to be able to preserve any organized sediment which may be present in the urine.

This, according to Fischel (*Prager Medicinische Vohenschrift*, 1895, No. 12), may be accomplished by washing the sediment two or three times with normal salt solution, best with the aid of the centrifugal machine, and preserving it in equal parts of glycerin and water, to which a little (about 2 per cent) saturated alcoholic solution of thymol has been added.

Sediments treated in this way preserve their structural characters indefinitely, and may at any time be mounted for study with the microscope by simply placing a drop of the mixture on a slide, covering it, and preventing evaporation by a ring of varnish.—*Medical News*.

Fate of a Famous Health Resort.—Forty years ago Mentone was a healthy village in France, where lived peasantry happy in their farms and their superb physical state, conditioned by the climate. It was discovered that the region was a most healing climate for consumptives, and it became the Mecca for the unfortunates of Europe so stricken. The inhabitants abandoned their farms to wait upon the strangers. The strong, healthy women forsook their dairies and became the washerwomen of the consumptives' clothes. No precautions were taken; the disease was not then understood as now, the theory of the tubercle bacillus not having been discovered. The place to-day is bacillus ridden, a pesthole, death itself. The hitherto strong inhabitants are emaciated, a coughing, bleeding people, filled with the germs of consumption. The soil and the air are both contaminated with them. It is no longer a resort. The same fate it is believed awaits many other similar health resorts unless active means are taken to destroy all germs. This will be a most difficult task, because consumptives themselves, as a rule, are not thoughtful of the danger they spread, or of the rights of others. They should bear in mind that if all others had been careful they, too, might have escaped.—*The Medical and Surgical Reporter*.

Comparative Vitality of the Sexes.—It is the common impression that men are not only less subject to illness, but are longer lived, than women. The life tables of insurance companies, however, show that the term of life of women is slightly longer than that of men. The difference in the mortality rates during the first few years of life is striking. During the first year the mortality among males is decidedly greater than among females. Although more boys are born than girls, the proportions are reduced to almost even terms at the end of the first year by the excessive male mortality. Even during the first four years the mortality among males exceeds that among females, notwithstanding the fact that there are practically no distinctions made in the management of the two sexes. Both are subject to the same conditions, are dressed virtually the same, and receive the same food. At about five years the comparative death rate among girls begins to increase. This has been attributed to the fact that boys of this age are more in the open air. The mortality in both sexes diminishes from this time until the twelfth year, when it attains its lowest point.

It then steadily rises, being large in each successive year. Between the twelfth and sixteenth years the death rate among girls increases more rapidly than among boys; but after the sixteenth year, for several years, the rate of increase is more rapid on the male side. The explanations that have been offered for these peculiarities are not wholly satisfactory; but one fact is clear, that during early years females possess a greater tenacity of life than do males.—*Medical Record*.

Quantitative Estimation of Sugar in Urine.—The methods of quantitative sugar determination in urine which have heretofore been proposed have either been so crude as to lack all diagnostic value or have been too elaborate for ordinary clinical purposes, requiring, as a rule, special laboratory appliances. There has been no test for sugar which, similar to Esbach's albumin test, was simple of performance, and yet of sufficient accuracy to meet the requirements of the clinician.

Such a test has, however, been recently suggested by Paulus, in the *Korrespondenzblatt für Schweizer Aerzte*, 1895, No. 1. Its basis is the ordinary Fehling test.

As is well known, the copper of each cubic centimetre of the standard Fehling solution (containing 0.034 gramme of cupric sulphate) is reduced by five milligrams of glucose. If, then, all the sulphate of one cubic centimetre of Fehling's solution is reduced by a certain quantity of urine, that urine must have contained an amount of reducing substance equivalent to five milligrams of glucose, and the calculation of the percentage of sugar contents is easy; but as ordinarily employed this test required the use of a burette, of pippettes, and of beakers, and is in so far inapplicable at the bedside. For Paulus' test only a medicine-dropper is necessary in addition to a test tube and freshly prepared Fehling's solution.

By means of the dropper two cubic centimetres (forty drops) of the Fehling solution are measured out into the test tube, are diluted by the addition of about twenty cubic centimetres of water and boiled. This quantity of copper solution requires one centigram of sugar for its reduction. Urine is then added drop by drop, the heating being continued, until the blue of the Fehling solution has changed to a yellow, when the number of drops to the cubic centimetre, divided by the number of drops of urine added, gives the approximate percentage of sugar, since that many drops of urine contain one centigram of sugar.

It is maintained by Paulus that this test is sufficiently accurate to fulfill most clinical requirements and so simple as to be readily applicable at the bedside.—*Medical News*.

The Differential Diagnosis of Inflammatory and Non-Inflammatory Effusions.—M. Rivalta of Rome has employed a simple test on which he places great reliance, in determining whether an exudate is of inflammatory or non-inflammatory origin. With this object he removes, with an ordinary hypodermic syringe, some of the suspected fluid. Two hundred grammes of distilled water are poured into a large glass; to the latter two drops of anhydrous acetic acid is added, and a drop of the fluid to be examined is dropped into the mixture. It can be noted, in case the fluid is of inflammatory origin, that the suspected drop in descending to the bottom of the glass, assumes a white-bluish coloration and a spiral form like the smoke from a cigar. This phenomenon may be repeated each time a drop of the suspected fluid is introduced into the glass. If a little more acetic acid be added to the glass the precipitate formed at once disappears, thus permitting the conclusion that the precipitate was not mucine, insomuch as the latter is insoluble in an excess of acetic acid. M. Rivalta concluded that the substance present in the inflammatory exudate is a nucleo-albumin produced from the protoplasm of the leucocytes and pus-corpuscles. The foregoing method of examination, when applied to transudates of non-inflammatory origin, constantly yields negative results.—*Medical Record*.

The Harvard Medical Faculty Vote to Require a Degree for Admission.—At a meeting of the faculty of the Medical School of Harvard University, held January 4th last, the following vote was passed with little less than unanimity.

“In and after June 1901, candidates for admission to the Medical School must present a degree in arts, literature, philosophy, science, or medicine from a recognized college or scientific school, with the exceptions of such persons, of suitable age and attainments, as may be admitted by a special vote of the faculty taken in each case.”

“All candidates, whether presenting a degree or not, are and will be required to satisfy the faculty that they have had a course in theoretical and descriptive (inorganic) chemistry and qualitative analysis, sufficient to fit them to pursue the course in chemistry given at the Medical School. The faculty called attention to the diminution in proportion of the college-bred men who had entered the school since 1884, in which year the maximum of 53.9 per cent. was reached. This diminution went on steadily until in 1892 the ratio was only 28.2 per cent., a ratio which with one exception was less than in any year since 1872. Since 1892, however, the ratio of graduates of colleges and scientific schools generally has been again on the increase, and in 1895 the proportion of students having such degrees as are to be required was 40 per cent.—*Medical Record*.

Pimples and Comedones.—According to the Indian Medical Record, a lotion of alcohol three ounces, and salicylic acid one drachm, will cause a prompt disappearance of these unsightly facial blemishes. —*The Medical Age*.

The Treatment of Tuberculosis.—On passing in review the multitude of remedies recommended from time to time against the scourge of mankind—pulmonary tuberculosis—one cannot but be struck by the paucity of our therapeutic resources. The demonstration of the microbial origin of phthisis effected a revolution in the treatment, and led to the internal administration of antiseptics, such as creosote, the use of which has been attended with some measure of success. Attempts have also been made to combat the disease by the subcutaneous employment of antiseptics, and among these Aristol or dithymol has been employed with effects sufficiently favorable to warrant a general trial. In a communication to the Paris Academy of Medicine, several years ago, Dr. Nadaud reported twenty-three cases of pulmonary tuberculosis, in seven of which a complete cure was produced by subcutaneous injections of a one per cent solution of Aristol. He regarded the drug as perfectly innocuous and found that it was an active antiseptic and rapidly promoted the nutrition. In his opinion, it was useful in the first and second stages of the tuberculous process, but unavailable when cavities had formed. These favorable results were confirmed by Dr. Da Silva while Dr. Ochs who also experimented with the remedy in six cases wrote less encouraging of its use. On the other hand, Dr. Berardinone, who tried Aristol in twelve cases reached the same conclusions regarding its value as Nadaud. He employed it however, in larger quantities, injecting a 15 per cent solution. According to his investigations the remedy is especially efficient in the early stages of tuberculosis, reducing the temperature, diminishing the cough, expectoration, and number of bacilli in the sputum, and producing a rapid gain in weight. The last physician to publish his experience with Aristol is Dr. S. S. Grusdieff (*Therap. Wochenschr.* Sept. 1, 1895) who treated thirty-five patients with subcutaneous injections of the drug in amounts of 0.01 to 0.45 Gm. daily. Under its use the bacilli were diminished or disappeared from the sputum, which also became less abundant and tenacious; the cough and night sweats were greatly relieved; and in three cases the physical signs completely subsided, so that the patients appeared entirely cured. Aside from the pains caused by the injections, which can be readily tolerated the remedy proved perfectly innocuous, and, in the author's opinion, there is reason to hope that in cases of older persons it will be a valuable addition to the materia medica of pulmonary tuberculosis.

The Medical View of Water Three Centuries Ago.—It needed a very bold man, says The Hospital, to resist the medical testimony of three centuries ago against water-drinking. Few writers can be found to say a good word for it. One or two only are concerned to maintain that, “when begun in early life, it may be pretty freely drunk with impunity, and they quote the curious instance given by Sir Thomas Elyot in his “Castle of Health,” 1541, of the Cornish men, “many of the poorer sort, which never, or very seldom, drink any other drink, be notwithstanding strong of body, and like and live well until they be of great age.” Thomas Cogann, the medical school-master of Manchester fame, confessed in his “Haven of Health,” 1589, designed for the use of students, that he knew some who drank cold water at night or fasting in the morning without hurt; and Dr. James Hart, written about fifty years later, could even claim among his acquaintance “some memorable and worshipful ladies who drink little other drink and yet enjoy good health.” The phenomenon was undeniable but the natural inference was none the less to be resisted. Sir Thomas Elyot himself is very certain in spite of the Cornish men, “that there be in water causes of divers diseases, as of swelling of the spleen and liver.” He complains oddly that “it flitteth and swimmeth,” and concludes that “to young men and them that be of hot complexion it doeth less harm and sometimes it profiteth but to them that are feeble old, and melancholy, it is not convenient.” “Water is not wholesome cool by itself for an Englishman” was the verdict of Andrew Bordé, monk, physician, bishop, ambassador, and writer on sanitation as the result of a life’s experience. And to quote again the Englishman’s Doctor.”—

Both water and small beer, we make no question,
Are enemies to health and good digestion.

But the most formal indictment against water is that of Venner, who writing in 1622, ponderously pronounces “to dwellers in cold countries it doth very greatly deject their appetites, destroy the natural heat and overthrow the strength of the stomach, and consequently confounding the concoction, is the cause of crudities, fluctuations, and windiness in the body.—*Medical Record*.

Albany Medical Alumni Dine.—The first annual dinner of the newly-formed Albany Medical College Alumni Association of Greater New York was given January 16. The association was organized December last, and has a membership of nearly seventy-five. The dinner was served in the octagonal banquet hall of the Hotel Savoy, and about fifty members assembled at the first festive meeting of the association. The President, Dr. John W. Warner, occupied the central

seat of the table of Honor. In company with him were the Rev. Dr. John E. Bushnell, Prof. Albert Vander Veer and Prof. Samuel B. Ward, of the faculty of the college, The Rev. Dr. Andrew V. Raymond, President of Union College, and Dr. Edward Hall. Among the guests were Assistant District Attorney John F. McIntyre, John P. Faure, Commissioner of the Public Charities; Prof. William H. Thompson, ex-congressman John S. Wise, of Virginia; Dr. Maurice J. Lewi, Secretary of the State Board of Medical Examiners, and St. Clair McKelway. There were also present the following officers of the alumni: Dr. Horace Macy Hanks, Vice President; Dr. Warren C. Spalding, Secretary; Dr. Robert F. McFarlane, Assistant Secretary; Dr. Allen Fitch, Treasurer; Dr. John A. Cutter, Dr. Robert E. Fivey, Dr. L. N. Lanehart, of Hempstead, N. Y., and Dr. Henry F. Muller, of Brooklyn, Governors.

Bovine Tuberculosis Caused Ten Per Cent of the Deaths.—The fifteenth annual report of the State Board of Health was given out for publication yesterday.

The existence of bovine tuberculosis in this state is declared to have become a serious menace to public health. It is well established that it may find its way into the human system through the medium of milk. The work of the tuberculosis committee of the state board was restricted last year by the \$20,000 appropriation. To destroy all the cattle affected with this disease in this state would necessitate an expenditure of nearly \$1,000,000. Should this be done, rules could be established which would permanently protect the people. Over ten per cent of the deaths of the year were from this disease. It is the unanimous opinion of the board that it is the most important public health question of the hour, and the legislature is urged to make a sufficient appropriation to prosecute the work with the utmost vigor.

State Regulation of Medical Expert Testimony.—It is rumored that a bill has been prepared and will be introduced into the next New York Legislature aiming to change the present method of getting expert testimony. A "non-partisan board" is to be appointed by the governor and confirmed by the Senate, and to this board all questions involving expert testimony will be referred. No one not a member of this board will be allowed to testify in any other court except upon questions of simple fact. Regarding this plan the Medical Age says: "Regarding the bill which is to be presented to the New York Assembly, as now outlined, it presents one very weak point. It is gotten up by a class of specialists, inasmuch as it is demanded the board shall be recruited from the ranks of expert alienists alone, though the plea is added that

these are to be men having a high ascertained qualification. The qualifications of an expert, however, demand something more than mere ability to pass upon the sanity or insanity of an accused person. Alienists are no more competent to pass upon matters of expert pathology, microscopy and chemistry than are other practitioners. Insanity is but one of the many pleas that require the careful attention of the court; further, the majority of so-called experts are men who have made their reputation on the basis of articles contributed to the medical press or to medical societies, and who consequently are likely to err in those points which are most familiar to the general practitioner.—*Medical Record*.

A Test for Distinguishing Between Serous Exudations and Simple Transudations.—Rivalta (Rif. Med., April 24, 1895) finds that if a drop of glacial acetic acid is added to a serous exudate (that is, an inflammatory effusion) a slight cloud forms in the wake of the falling drop, which precipitate redissolves on the addition of more acid. No such reaction takes place in mere transudation, that is, non-inflammatory fluids. A good way of doing the test is to let fall a drop of the suspected fluid into 200, 400 cm. of distilled water, acidulated with two to four drops of glacial acetic acid. If the fluid is an inflammatory exudate, a whitish streak follows the falling drop, and on the addition of more acid, is dissolved. Examination of the precipitate shows that it belongs to the class of nucleo-albumins. The author's method presents a clinical advantage, in that a mere drop or two of the fluid (such as can be easily withdrawn with a hypodermic syringe) suffices to provide material for the test.—*The Medical and Surgical Reporter*.

Acetylene Gas is a substance likely to prove useful in medicine and surgery. When lime and carbon mixed together are subjected to the heat of a properly constructed electric furnace, they are fused into a compound known as calcic carbon which contains twenty parts of calcium and twenty-four of carbon. When water is added to this, decomposition takes place, with the result of forming calcic oxide, and a hydrocarbon compound which is known as "acetylene." This acetylene is a gas of an illuminating power from fifteen to twenty times stronger than that of ordinary gas. The light which it gives is white and brilliant, and has relatively fewer heat rays than the ordinary gas. It seems that brilliant portable illuminators can be devised, and also that some cheap apparatus for thermo-caustic purposes can be produced. The portability of the gas, or of the substances which produce it, is another element in its favor. The only serious objection to it, so far as we have learned, is that the gas is extremely poisonous, much

more so than ordinary gas, and is of a lower specific gravity. In attempting to illuminate a house with it therefore, perhaps some risk may be run, though probably this can be provided for eventually. It would not, in any event, apply to the limited use of light for illumination in surgery.—*Medical Record*.

Transmission of Scarlet Fever by Means of Letters.—Grasset (*Annales de Hygiene*, 1895, xxxiv. p. 143) records a case illustrating this method of transmitting the contagion. A child visiting away from home was taken ill with scarlet fever, and the desquamation was so marked that the friends wrote home to the parents describing the condition and enclosing several pieces of the skin. Six and a half days after the letter was received a baby brother fell ill with the same disease. The only other case of the kind reported, according to the author's knowledge was recorded by Sanne. Two persons received a letter from a scarlatina convalescent, who stated that she was desquamating so freely that particles of cuticle fell upon the paper as she wrote. Both her friends fell ill of the disease some days later.—*Medical News*.

Negro Suicides are Rare.—A remarkable characteristic of the colored population of the city is the fact that the proportion of them who commit suicide, who solicit alms or free lodging, and who are arrested, is much smaller than among any other class of people. A colored suicide is a rarity and, while the officials of the coroner's office admit that there are some, they cannot remember when they had the last case of that kind. There are on an average about one hundred and twenty-five cases of suicide reported to the coroner annually, and of these less than five would be colored. Deputy-Coroner Dugan, who has been in the office for many years, can remember but a few cases of colored suicides. The natural light-heartedness and sunny temperament of the colored people may be given as their great safeguard against suicide. Reverses and disappointments, which in a more sensitive class of people would result in despondency and eventual self-destruction, are laughed aside by the negro, who habitually looks on the bright side of life, and manages to get enjoyment out of whatever comes his way. While the mere fact of being out of work does not affect the colored people enough to drive them to suicide, the evidence of their natural industry cannot be better illustrated than by making note of the small proportion of them who ask alms or seek lodgings in the city station-houses. A colored tramp is more of a novelty than a colored suicide. They are nearly always willing to work at anything that turns up, and all are, as a rule, self-sustaining.—*Medical Record*.

Phenacetine in Urinary Disorders.—The antipyretic, analgesic, and sedative properties of Phenacetine have received full recognition from the medical profession and have been utilized in a wide range of pathological conditions. There is one class of disease, however, in which this remedy has not received the attention it would seem to merit on the ground of the remarkably favorable results derived from its use by some practitioners, viz.: disorders of the genito-urinary tract. Some time ago Dr. Traill Green pointed out that the frequent urination attending certain affections of the genito organs in persons of advanced age, and disturbing the night's rest, can frequently be relieved by 10 grain doses of Phenacetine at night. Dr. Haliday, (Virg. Med. Monthly) has found it excellent in cases of enuresis in children, five grains at bed-time, and in the troublesome too frequent micturation of enlarged prostate, especially where cystitis is present. In the latter cases he gives a large dose, as much as 20 grains at bed-time, with the happy result that the patient sleeps better and is not compelled to arise so often during the night. In a recent paper in the *Medical Review*, Dr. S. C. F. Meder states that the influence of Phenacetine in blunting the nerves of sensation can be taken advantage of in some functional troubles of the genito-urinary system. In many cases of nocturnal incontinence in children he has observed that a dose of this drug given on retiring acted like a charm, and afforded prompt relief from this troublesome symptom if due to a hypersensitive condition of the neck of the bladder. Dr. I. J. M. Goss also regards Phenacetine as a precious remedy in the too frequent micturation from enlarged prostate and an irritable bladder or cystitis. In cases of the latter kind in which the urine is highly surcharged with acid, he associated the administration of Phenacetine with that of carbonate of lithia and has been enabled by this treatment to effect a cure in chronic and obstinate cases of chronic cystitis and irritable bladder. In the enuresis of children also his results confirm the favorable testimony of other observers.

Euophen in Syphilitic Afflictions.—After careful bacteriological and clinical investigations has shown that Euophen was possessed of all the properties that constitute a perfect substitute for loquor great expectations were entertained of its possibilities in the treatment of syphilitic troubles. That these anticipations have been abundantly realized is demonstrated by the following brief review taken from an interesting article by Dr. Arthur Straus of Barmen, published in the *Times and Register*, July 28, 1894.

Eichhoff at first commended subcutaneous injections of Euophen oil (0.05–0.1 gm. daily) in constitutional syphilis. Later he discon-

tinued their use because the positive results were not commensurate with the disturbances produced. On the other hand, he highly recommends the remedy in the local treatment of syphilis. Five cases of chancres healed completely on the average in fourteen days, and the same effect was obtained in four cases of broad condylomata. Nolda also recommends Europhen in chancres. Gaudin concludes that in the form of subcutaneous injections it is of little service in secondary syphilis, but that when injected in the vicinity of tertiary cutaneous lesions it always exerts a beneficial action. The patients submitted willingly to the nearly painless injections. He advocates its use for ulcerations, gummata, etc., as a good local remedy (sixteen cases). Migneco, Shoemaker and Eichler have also employed Europhen locally as an ointment in tertiary syphilis with success; the best results were obtained by Gottheil, who secured rapid healing in three out of four cases. According to Ullmann, Europhen always exerts a cleansing and healing effect, and for the treatment of hard gummata and syphilitic papules he advises the following procedure: at night the parts are covered with mercurial plaster, and in the morning cleansed with sublimate solution, then dusted with Europhen and covered with sterilized gauze.

Excellent results in syphilitic processes have also been observed by Effelein and Neuberger, as well as by Rosenthal, who successfully employed it in syphilitic ulcerations of the pharynx. Effelein and Neuberger noted more rapid healing after injections of 1 per cent Europhen oil used daily or several times a week in cases of tertiary lues. The same favorable influence of these injections was also demonstrated by Gaudin who injected a 5 per cent solution in oil every five days. From four to seven injections were found sufficient, These were at first painful, but produced no toxic reaction. Secondary syphilis, however, was not influenced by the injections.

Anecdote of Dr. Leidy.—Dr. William Hunt, the famous surgeon, tells the following anecdote concerning the venerable doctor: The only instance I ever knew of Dr. Leidy's departure from strict truth was, to a medical man's way of looking at it, a very amusing one. Some years ago he came to my house in quite an enthusiastic mood, and said: "Dr. Hunt, do you know that they are moving the bodies from a very old burying-ground down town to make room for improvements?" "Yes," I said. "Well," he went on, "two bodies turned into adipocere are there (this is an amoniactal soap and the bodies are commonly called petrified bodies). They have been buried for nearly a hundred years; nobody claims them, and they would be rare and

instructive additions to our collections." "All right; I shall be delighted." So Leidy went down to secure the prize. When he spoke to the superintendent, that gentleman put on airs, talked of violating graves, etc.; so the discomfited doctor was about to withdraw. Just then the superintendent touched him significantly on the elbow and said: "I tell you what I do, I give bodies up to the order of relatives." The doctor took the hint, went home, hired a furniture wagon, and armed the driver with an order reading: "Please deliver to bearer the bodies of my grandfather and grandmother." This brought the coveted prizes, and the virtuous caretaker was not forgotten.—*Medical Record*.

Lister's Renewed Allegiance to Carbolic Acid.—It is not surprising to those who have kept pace with the progress of antiseptics to hear Sir Joseph Lister, after twenty years of investigation and experiment, declare his renewed allegiance to carbolic acid, as he did in a lecture January, 1893, at Kings College hospital in London (*Annals of Surgery*, June, 1893).

Carbolic acid is not only a more efficient surgical germicide than corrosive sublimate, but it is much more efficient in cleansing the skin. It has a powerful affinity for the epidermis, penetrating deeply into its substances, and it mingles with fatty materials in any proportion. Corrosive sublimate on the other hand cannot penetrate in the slightest degree in anything greasy; whence those who use it require elaborate precautions in the way of cleansing the skin. All of this is unnecessary with carbolic lotion. Sir Joseph does not even use soap and water, trusting entirely to carbolic acid.

There is a new product of Phenol and Boracic Acid, in which has been mitigated the pungency of Carbolic Acid, disguising its odor, and greatly supplemented its efficiency by its combination with Boracic Acid, which, although, admittedly slower in its action, it nevertheless, unsurpassed as a true germicide.

Necessity of Frequent Visits.—The Supreme Court of California (Todd vs. Myers, 40 Cal., 355), in an action brought by a physician for professional services—the defence being that the visits were too frequent and not necessary—rules that "The defendant having admitted the employment of the plaintiff as a physician to treat his wife and children, the plaintiff was the proper judge of the necessity of frequent visits and, in the absence of proof to the contrary, the court will presume that all the professional visits made were deemed necessary and were properly made. It would be a dangerous doctrine for the sick to require a physician to be able to prove the necessity of each visit before he can recover for his services. This is necessarily a matter of judgment, and one concerning which no one save the attending physician can decide. It depends not only upon the condition of the patient, but in some degree upon the course of treatment adopted."—*Medical Record*.

REVIEWS AND BOOK NOTICES.

A Manual of Syphilis and Venereal Diseases.—By James Nevins Hyde, A. M., M. D. Professor of Skin and Venereal Diseases, Rush Medical College; Dermatologist to the Presbyterian Michael Reese and Augustana Hospitals; and Consulting Physician to the Hospital for Women and Children, Chicago; and Frank H. Montgomery, M. D. Lecturer on Dermatology and Genito-Urinary Diseases, and Chief Assistant to the Clinic for Skin and Venereal Diseases, Rush Medical College; Attending Physician for Skin and Venereal Diseases, St. Elizabeth Hospital, Chicago. With 44 illustrations in the text and 8 full page plates in colors and tints. W. B. Saunders, Philadelphia, 1895.

There comes from the publisher, W. B. Saunders, Philadelphia, a "Manual of Syphilis and the Venereal Diseases," by Hunt and Montgomery which calls for our highest commendation. After giving it careful attention we can but recommend it as a most surprisingly complete work on the subject. As a class text-book in medical institutions it will meet with undoubted success, as it is concise, the illustrations clear, and to the point, and in the midst of an avalanche of modern works on this subject this stands out as a landmark of worth. The publisher has accomplished his work in the manner for which his house has established and maintained its well-merited success.

An American Text Book of Surgery, for Practitioners and Students. By Charles H. Burnett, M. D., Frederic S. Dennis, M. D., Charles B. Nancrede, M. D., Lewis S. Pilcher, M. D., Francis J. Shepherd, M. D., William Thomson, M. D., Phineas S. Connor, M. D., William W. Keen, M. D., Roswell Park, M. D., Nicholas Senn, M. D., J. Collins Warren, M. D., Lewis A. Stimson, M. D., and J. William White, M. D. Edited by William W. Keen, M. D., L. L. D., and J. William White, M. D., Ph. D. Second edition, carefully revised. W. B. Saunders, 925 Walnut street, Philadelphia, 1895.

We announce with much pleasure receipt of the second edition of "An American Text Book of Surgery," which has been revised and greatly improved. Its success as a first edition, evinced by its adoption as a text-book in over sixty medical schools in this country, as well as by a phenomenal sale abroad, testifies most strikingly to its merits. In the second edition the authors and publishers have endeavored to grasp that which is latest and best in surgery. It is a modern text-book in every respect, written by thirteen of the most eminent teachers in the United States. Many of the illustrations have been redrawn, and a number of new ones substituted for old ones. Every professor of surgery will do wisely to recommend this work to his students, if they wish to keep abreast of that which is practical and easy of access.

READING NOTICES.

Six Hundred (\$600) in Prizes.

The special attention of our readers is called to the advertisement of the Palisade Manufacturing Co. with the above title on page 3 of this issue.

The prize contest which this well known firm announces will no doubt attract a great deal of attention and result in the submission of many articles of merit on "The Clinical Value of Antiseptics, both Internal and External". The prizes are extremely liberal, and the well known professional and literary eminence of Dr. Frank P. Foster, the talented Editor of the *New York Medical Journal*, who has kindly consented to act as judge, is a sufficient guarantee of the impartiality to be observed in the awarding of the prizes.

We are assured that there is absolutely "no string" attached to the provisions of this contest, and any physician in good standing in the community is invited to compete on equal terms with every other competitor.

Further particulars as to conditions, etc., can be obtained by addressing the above named firm.

"I have found Kola-Koloid of benefit to myself and during that time of trial to the mental and physical condition of all housewives, viz., house-cleaning, my wife has found it invaluable. William E. Anthony, M. D., Providence, R. I., May 1, 1895.

Dr. Edward F. Quinlan, 308 West 20th street, says: "I have found BORINE invaluable in my practice. In such cases as indicate an antiseptic or as a prophylactic remedy it has found favor at my hands. In Leucorrhœa or as a Mouth Wash in aggravated Stomatitis its effects are of special value.

To no member of the profession is asepsis of more importance than to the gynæcologist. Everything that comes in contact with the genital tract during an operation must be aseptic. After boiling his instruments they should be placed in a solution of BORINE, his hands and those of the assistants and nurses should be scrubbed with soap and BORINE. In the preparation of the patient the vagina should be well doused with a solution (six tablespoonfuls) of BORINE to a pint of water, and the hair about the genitals shaved and the vulva scrubbed with soap and BORINE solution.

Not only in the treatment of Leucorrhœa and Vaginitis, but used as a preventive by its addition to the daily vaginal douche BORINE is not only of inestimable value to the physician, but will, with the fact that it does not stain the most delicate fabric, meet with the greatest approval from his female patients.

The Ideal Tonic Wine.

Every person needs something at this season of the year to relieve them from nervous debility, loss of appetite, and general depression, and to nourish and stimulate the body and brain; in fact, something that will restore them to health and vitality again.

The newspapers are constantly filled with advertisements of patent medicines that have varying virtues, with varying seasons; but always the same medicine. In one season they are advertising to cure rheumatism; in another catarrh, while in still another they are being advertised as "tonics" to build up the system, and are alleged to be the great and only remedy for this purpose.

Anyone with half an eye can see the absurdity of these claims, for remedies made after one formula, in great vats or tanks, any physician knows what danger—even greater than the disease itself—lies in the introduction into the stomach of a miscellaneous lot of drugs applied without professional advice. There are hundreds of these medicines in the market, but they are under the ban, and their sale is now being made a criminal offense in some States, as they contain arsenic, chloral or opium, or other deadly ingredients. Thousands of people are buying patent medicines at random, in a reckless attempt to give the system the medical assistance it requires. In view of the fact that at this time of the year something is actually needed by the system, to carry off the poisons which have been accumulated in the stomach, bowels and kidneys, the publishers of these reports have made an investigation of a number of preparations pretending to meet this requirement, and find that nothing fills the bill so completely as Vin Mariani, "The Ideal French Tonic Wine," which fortifies, nourishes and stimulates both the body and the brain; it restores health, strength, energy and vitality quicker and better than other tonics that we have, as yet, investigated. We have satisfied ourselves of the great value of this superior remedy as a tonic, and have no hesitancy in recommending it to all our readers. It is the only rational treatment within our knowledge, because it removes the cause of disease and permanent cure speedily follows. "Vin Mariani" is especially valuable to those who have suffered from the grip, influenza, or any malady, in destroying the poison in the blood, as it quickly removes all accumulated poisons from the system, improves the circulation, enriches the blood and strengthens the stomach and bowels, as well as all the other vital organs of the body. No medicine could be more agreeable to the taste and at the same time beneficial or more exactly in the line of what we are pleased to recommend to our readers than this preparation, placed upon the market by Mariani & Co., Paris, France, and 52 West Fifteenth street, New York. In fact, so popular and reliable is "Vin Mariani" for an ideal tonic for the system, Her Imperial Majesty, the Empress of Russia, has recently telegraphed Mariani & Co. for a dozen "Vin Mariani," by order of the Court physicians and subsequently ordered a case of 60 bottles, for use in the Imperial household.

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The Value of the Antitoxine Treatment in Diphtheria.*

BY HENRY HUN, M. D.,

Professor of Diseases of the Nervous System in the Albany Medical College.

Some three years ago I read before this society a paper entitled "Disease and Immunity,"† in which the nature of antitoxine, the manner of its preparation, and the theory of its action were discussed. Since that time diphtheria antitoxine has been extensively used in the treatment of diphtheria, and we have to-night to sum up the results of that treatment and to arrive at conclusions as to its value.

This method of treatment is based on the fact, to which all experimenters are agreed, that a suitable dose of diphtheria antitoxine injected into an animal into which Löffler bacilli have previously been injected will certainly cure the animal. This experiment has been tried over and over again, and the result can be predicted with almost mathematical accuracy. Although there can be no doubt as to the certainty of this method of treatment in the experimental diphtheria of animals, it does not necessarily follow that this same treatment will be of the slightest value in cases of human diphtheria. There is some doubt as to whether animals ever suffer from true diphtheria, and whether the disease produced in animals by the injection of the Löffler bacillus is identical with the diphtheria which we meet with clinically. Furthermore, it has been questioned whether diphtheria in man is due to the Löffler bacillus and, finally, the remedy which cures an animal may be without any effect upon a man suffering from the same disease.

If we consider each of these questions separately, we must say in regard to the first that a number of experimenters, such as Welch,‡ regard the disease produced in animals by the Löffler bacillus as closely resembling diphtheria in man; the local symptoms being due to the direct action of the bacilli and the general symptoms to the

* Read before the Albany County Medical Society on March 4, 1896.

† Albany Medical Annals, July, 1893.

‡ The Johns Hopkins Hospital Bulletin Nos. 52-53, July-August, 1895, or Transactions of Association of American Physicians, 1895, vol. x, page 316.

absorption of toxalbumins. Certainly the injection of these bacilli into animals is fatal, and this fatal result can be avoided by injecting the diphtheria antitoxine, so that it would certainly seem advisable to try this same method in the treatment of human diphtheria.

In regard to the second point, there is getting to be a greater and greater unanimity among pathologists that primary diphtheria is almost always due to the Löffler bacillus. In regard to this point Welch* makes the following remarks: "The statement is sometimes made that 25 to 30 per cent, or even a larger per cent of the clinical diphtherias, are not genuine diphtheria in the bacteriological sense, but this statement is quite misleading. These figures are based upon the bacteriological examination of large numbers of cases in which there was simply more or less suspicion of diphtheria. They do not relate generally to a large number of cases presenting unmistakable anatomical and clinical characteristics of diphtheria. They are derived from the routine examinations for boards of health and children's hospitals of suspected cases of diphtheria. When one considers that in some cases of diphtheria repeated, painstaking examination, microscopical and cultural, by a skilled bacteriologist, is required for the detection of the diphtheria bacillus, it is evident that less reliance is to be placed upon these statistics *en gros* than upon many smaller series reported by bacteriological experts. Of the statistics of the latter character there are many which show that in the series of cases examined (including in each series from a dozen to over three hundred cases) from 90 to 100 per cent of the clinical diphtherias are due to the Löffler bacillus. Our experience in Baltimore has been that not over 5 per cent of the cases which the clinician would confidently diagnose as diphtheria are false diphtheria or diphtheroid. These latter figures relate, of course, to primary diphtheria and not to the pseudo-membranous anginas complicating scarlet fever and other infectious diseases, a large proportion of which are not referable to the Löffler bacillus."

In the light of such a statement made by such a careful observer as Welch, we are justified in considering that almost without exception the cases of disease, which we clinically diagnosticate as diphtheria, are due to the Löffler bacillus.

Finally the question as to whether this remedy which is so efficacious in the treatment of experimental diphtheria is also of value in the treatment of human diphtheria, can only be settled by a large number of observations. I have no personal observations to offer. I have treated very few cases of diphtheria during the past two years,

* Welch, loc. cit.

and my experience with the antitoxine treatment is extremely limited. My paper must consist, then, of a review of the statistics of others.

It is well known that statistics lead at times to erroneous conclusions; but after all our own experience is the statistics of our own observations more or less accurately kept, and general statistics are merely the experience of many observers. It is by statistics that the value of any drug must be ultimately determined. The chief danger lies in broad generalizations founded on too few observations. The larger the statistics are the more trustworthy do they become. There are three statistical methods of judging the results of the antitoxine treatment. The first is by tabulating the reports of a number of different observers. This method is not very satisfactory; first, because all the cases of the disease occurring in a given locality at a given time cannot be compared in this way since many physicians will not make these voluntary reports; and second, because the observations of different clinicians are of very unequal value; and finally, because such reports are apt to be written with a strong bias, and if the cases are few in number the conclusions may be misleading. The second method is by comparing the annual death rate and the number of cases of the disease and the deaths from it that are reported to the board of health. By this method almost all the cases occurring can be compared, and the cases are reported and collected with absolute impartiality, but there is some uncertainty in regard to the diagnosis. The third, and most satisfactory method is that in which a skilled clinician reports a large number of cases which he has himself carefully observed and treated. It is my intention to present briefly statistics obtained by each of these methods.

A large series of statistics in reference to the treatment of diphtheria by antitoxine is that obtained by the *Deutsche Medicinische Wochenschrift*.^{*} This paper sent questions in regard to this treatment to the physicians and hospitals throughout Germany, and the answers to these inquiries appear in the following table:

CASES TREATED WITH DIPHTHERIA ANTITOXINE—1 OCTOBER, 1894-1 APRIL, 1895.	UNDER TWO YEARS.			TWO TO TEN YEARS.			OVER TEN YEARS.			TOTAL.		
	Number of cases.	DIED.		Number of cases.	DIED.		Number of cases.	DIED.		Number of cases.	DIED.	
		Cases.	Per cent.		Cases.	Per cent.		Cases.	Per cent.		Cases.	Per cent.
Cases within the City of Berlin	50	13	26.0	431	67	15.3	81	4	4.9	562	84	15.1
Cases out of the City of Berlin	685	147	21.4	3599	288	8.0	987	40	4.1	5721	475	9.0
Total	735	160	21.8	4030	355	8.8	1068	44	4.1	5833	559	9.6
Cases treated in hospitals . . . . .	...	...	...	...	...	...	...	...	...	1442	210	14.6
Cases treated in private practice . . . . .	...	...	...	...	...	...	...	...	...	4391	349	7.9
Cases <i>not</i> treated with diphtheria antitoxine . . . . .	...	...	...	...	...	...	...	...	...	4479	656	14.7

^{*} Behring, *Deutsche Medicinische Wochenschrift*, 1895, page 623.

Of course these results are only approximate. Many physicians and hospitals made no reply to these inquiries. In some of the replies it was stated that on account of the expense of the antitoxine treatment it was used only in the most severe and probably fatal cases, while the milder ones were treated by the older methods. On the whole, however, in such a large number of cases errors are likely to counterbalance each other. The well known influence of age on the mortality from diphtheria is well shown in this table. The greater death rate which appears among the hospital cases is due to the fact that in general only severe cases, and those requiring tracheotomy, are sent to the hospitals. Many of the practitioners answered the question by a report of only a few cases and evidently had only slight experience in the treatment of diphtheria. A comparison of those reports received from private practitioners containing more than twenty cases each; therefore, from men having considerable experience in the treatment of diphtheria, gives the following results: * Total number of cases treated, 1762; number of cases treated with antitoxine, 1300; number of deaths, 75; percentage of mortality, 5.77 per cent; number of cases treated without antitoxine, 462; number of deaths, 89; percentage of mortality, 19.3 per cent.

Welch† made a compilation of the reports of cases of diphtheria treated with antitoxine up to July, 1895. His compilation embraces the reports of eighty-three observers (including the famous report of Roux's 300 cases) and consists of 7166 cases treated, with a mortality of 17.3 per cent. The mortality of diphtheria varies so greatly in different epidemics in different places that it is difficult to say what its average mortality is, but in a number of these reports the observers give the mortality which had occurred in the hospital or in the place previous to the introduction of the antitoxine treatment. If these reports are tabulated they are found to contain 5406 cases treated with antitoxine, with a mortality of 18 1-6 per cent, and if we estimate the number of deaths which would have occurred in these cases upon the basis of the least previous mortality, there would have been a mortality of 42.1 per cent.

The first thing which strikes us in the consideration of these statistics is, that although the antitoxine treatment seems to give better results than do other methods of treatment, yet, the remedy is not invariably successful, and that human diphtheria, therefore, presents a great contrast to experimental diphtheria in animals. When we look into the causes of this we discover that one essential thing in this

* Behring, loc. cit.

† Johns Hopkins Hospital Bulletin Nos. 52-53, July-August, 1895, or Transactions of Association of American Physicians, 1895, vol. x, p. 334.

difference is the fact that many cases of human diphtheria do not come under treatment until quite late in their course. In the experiments on animals it is found that it requires only a small quantity of antitoxine to prevent the animal from taking the disease, it requires a larger quantity to cure the animal after it has become infected by the disease, and the quantity of antitoxine required is greatly increased with each day or hour which has elapsed between the time of infection and the time at which the antitoxine is injected. The statistics which Welch* has prepared in showing the effect of injecting antitoxine early or late are very conclusive in this respect. In 222 cases of diphtheria in which antitoxine was injected on the first day the mortality was 2.3%. Among 456 injected on the second day the mortality was 13.5%. Among 168 cases injected on the fourth day the mortality was 19%. Among 116 cases injected on the fifth day the mortality was 29.3%, and among 44 cases injected on the sixth day the mortality was 34.1%. This agrees perfectly with the results found in experimental diphtheria. Another cause for the greater mortality in the human being is the existence of mixed infection. In experimental diphtheria we can subject the animal to the action of one kind of bacteria and eliminate that of all others, but in the human being the Löffler bacillus is often associated with other forms of bacteria in the throat, and this mixed infection is very fatal. Most of the cases of septic pneumonia occurring in diphtheria are due to the streptococcus infection rather than to the Löffler bacillus.

If we consider the next set of statistics, that obtained from the official publications of boards of health, among the most important are those obtained by the German Imperial Board of Health from all the public hospitals in Germany. In the first three months of 1895 there were treated with antitoxine in all the public hospitals of Germany 2,228 cases of diphtheria. Of these 1,805 were cured and 386 died; a mortality of 17.3%. Excluding cases dying within twelve hours after the beginning of treatment the mortality percentage is 16.7. The mortality among cases in which treatment was commenced on the first two days of the disease was 7.3%.† During the second three months of 1895, 2,130 cases were treated with a mortality of 14.3%, or excluding cases dying within twelve hours after commencement of treatment, 13.3%, and among the cases treated in the first two days of the disease the mortality was 6.4%.‡ I have not seen any publication of the results of the last two quarters of the year 1895. Hospital statistics

*Welch, loc. cit.†Behring, *Deutsche Medicinische Wochenschrift*, p. 623, 1895.‡Adolph, *Deutsche Medicinische Wochenschrift*, p. 41, 1896.

closely agree in giving under the older methods of treatment a mortality of between 35% and 50%, so that the statistics of the German Imperial Board of Health show a great lessening of mortality under the antitoxine treatment. Now, to explain this difference it has been stated that children are now brought earlier to the hospital, and milder cases are now admitted than was formerly the case, but the following table shows not only that this statement is unwarranted, but also that under the antitoxine treatment the mortality from diphtheria has been greatly lessened.*

	1891	1892	1893	1894	First 7 mos. 1895.
Total number of cases of diphtheria in Berlin	3,502	3,772	4,296	5,240	3,111
Number of cases of diphtheria in Berlin hospitals	1,727	2,120	2,403	2,900	1,666
Percentage of hospital cases to total number of cases	49.3	56.2	55.9	55.3	53.5
Deaths from diphtheria in Berlin	1,144	1,376	1,577	1,496	495
Deaths from diphtheria in Berlin hospitals	613	867	931	611	258
Percentage of deaths from diphtheria in Berlin	32.6	36.5	37.5	28.5	15.9
Percentage of deaths from diphtheria in Berlin hospitals	35.6	40.8	38.7	21.1	15.4

Although it is probable that cases of diphtheria occurring in the city of Berlin were reported to the board of health more certainly during the past two years than formerly, and this must be taken into account in drawing conclusions from the table; yet even then it appears that the percentage of cases admitted to the hospitals in comparison to all the cases in the city has not very materially varied during the past four years; while the mortality percentage and even the absolute number of deaths diminished very materially in 1894 when the antitoxine treatment began to be generally employed and diminished still more in 1895 when the treatment became more universal, and, contrary to all experience, the mortality percentage in the hospitals in 1894 and 1895 was less than the general mortality, doubtless because the antitoxine treatment was used more extensively in the hospitals than in private practice, especially in 1894 when the difference was greatest. To show that the diminished mortality in these tables was not due to the existence of a milder epidemic, a most instructive contrast can be made between the statistics of two large hospitals in Berlin, in one of which the antitoxine treatment was used in 1894, and in the other it was not used.†

*Behring, loc. cit.

†Behring, loc. cit.

	CHARITY HOSPITAL, IN WHICH ANTITOXINE WAS USED.			BETHANY HOSPITAL, IN WHICH ANTITOXINE WAS NOT USED.		
	Under 1 yr. old.	Over 1 yr. old.	Died.	Under 1 yr. old.	Over 1 yr. old.	Died.
Cases treated during 1894	18	299	53	11	249	112
Mortality in per cent . . . . .	...	16.7	...	...	43.1	...
Cases treated during last quarter 1894	7	155	13	...	58	19
Mortality in per cent. . . . .	...	8	...	...	32.7	...

It would seem as if the general public began to appreciate the difference in the results of treatment in these two hospitals. During the first nine months of the year more cases were treated in the Bethany hospital than in the Charity, but in the last three months of the year nearly three times as many cases were treated in Charity as in the Bethany, and not a single child under a year old was admitted to the latter hospital, which probably accounts for the slight improvement in its mortality percentage during these three months. A similar lesson can be drawn from the fact that during the period that Roux treated with antitoxine 300 cases in the Hospital des Enfants-Malades with a fatality of 26 per cent, the fatality in the Hospital Trousseau, also in Paris and receiving a similar class of cases, was 60 per cent.*

The great improvement in the mortality percentage in Charity during the last three months of the year is doubtless due to a better understanding of the treatment and to a larger dosage. The fact that the use of stronger serum and more of it diminishes the mortality is shown by Hueber.† He was one of the earliest clinicians to use the antitoxine treatment, so that his experience extends over a longer time than that of most other observers. He uses this treatment even in the worst cases. At first he used weak serum and the results obtained have steadily improved with the use of stronger serum. His mortality percentage previous to the use of this treatment was 42 per cent. He has treated in all 220 cases. Of these, 174 have been uncomplicated and have given a mortality of 8.6 per cent, and 46 cases have been complicated and have given a mortality of 21.7 per cent. The last 117 cases which he treated consisted of 97 uncomplicated, with a mortality of 10.3 per cent, and 20 complicated, with a mortality of 10 per cent. One hundred and ten cases were injected during the first three days of the disease, and these show a mortality of 5.4 per cent. The same thing is true of Roux's statistics. In the report of his first 300 cases his mortality was 26 per cent, which has steadily fallen to 15, 10 and 8 per cent, and now varies from 8 per cent to 12 per cent; although

* Welch, loc. cit.

† Deutsche Medicinische Wochenschrift, 1895, page 687.

some of this improvement is doubtless due to improvements that have been made in the hygienic condition of the hospital, which at first was very bad. Heuber thinks that the cases of paralysis after diphtheria are slightly less frequent when the antitoxine treatment is employed.

Before we leave the consideration of statistics furnished by boards of health we may say that it is probable that the mortality from diphtheria in all large cities has considerably decreased during the past year. I have been able to find very few of these statistics, but we have already found it to be true as regards the city of Berlin. During the past seven years the annual mortality in Paris from diphtheria has varied between 2000 deaths (the highest) to 1266 deaths (the lowest). During the year ending October 1, 1895, the mortality was 389.* In this connection the following table is of interest :

FORTNIGHTLY MORTALITY IN PARIS FOR THE PERIOD INCLUDING THE FIRST SIX MONTHS IN EACH OF THE FOLLOWING YEARS.†

FORTNIGHT.	1884.	1887.	1890.	1891.	1892.	1893.	1894.	1895.
First	97	81	55	74	49	83	75	26
Second	106	42	51	78	60	70	57	15
Third	102	73	81	76	46	51	53	23
Fourth	112	90	81	89	61	58	52	23
Fifth	145	84	83	93	66	62	65	22
Sixth	145	84	92	73	74	75	74	27
Seventh	121	78	93	76	56	62	54	15
Eighth	114	81	71	85	58	60	61	17
Ninth	106	74	86	69	55	61	52	19
Tenth	94	66	74	59	56	49	49	24
Eleventh	103	73	66	62	73	53	45	15
Twelfth	88	54	52	43	33	52	30	9
Thirteenth	67	55	78	33	55	46	38	4

In 108 French towns, with a population exceeding 20,000, the only places from which statistics are supplied regularly, the average number of deaths from diphtheria which had occurred during the first six months of the seven years previous to 1895 was 2627. During the first six months of 1895 the number of deaths from diphtheria was only 904, which is equivalent to a decrease of 65 per cent in the mortality caused by that disease. ‡

In the United States, partly from difficulty in obtaining a reliable serum, antitoxine has not been used nearly as extensively as in France or Germany, but nevertheless a great deal of it has been used, and it would seem to be having some effect on the mortality of diphtheria. Thus in New York state the deaths from diphtheria in 1895 were 4989 as against 6592 in 1894, and in Boston the deaths from diphtheria in 1895 were 588 as against 817 in 1894. I would not, however, attach

* Biggs, New York Medical Journal, 1896, vol. 1, page 221.
† London Lancet, 1895, vol. 2, page 431.
‡ London Lancet, 1896, vol. 1, page 48.

too much importance to these figures. There have been two years among the last dozen when the mortality in New York state was less than 4989 deaths, and perhaps the same may be true as regards Boston. Moreover, the use of antitoxine throughout New York state has been far from general.*

These statistics which have been obtained from the official publications of the board of health show even more clearly than the first series of statistics the superiority of the antitoxine treatment, although as in all such statistics, there is doubt as to the correct diagnosis in a few cases.

I wish now to give only two or three recent examples of the third and most reliable kind of statistics; those in which an experienced clinician has treated a large number of cases of diphtheria with its antitoxine. In all of these cases the clinical signs of diphtheria were clearly present. The first of these series of cases is that reported by Prof. Bose† of Giessen and appears in the following table:

DATE OF OBSERVATION.	Total.	Died.	Per cent.	Tracheotomy.	Died.	Per cent.	Not Tracheotomy.	Died.	Per cent.
January 1, 1890—January 1, 1893	93	48	51.6	84	45	53.5	9	3	33.3
January 1, 1893—January 1, 1894	186	82	44.0	148	78	52.7	38	4	10.5
January 1, 1894—October 26, 1894	144	54	37.5	91	49	53.8	53	5	9.4
October 27, 1894—July 31, 1895	112	9	8.03	52	8	15.18	60	1	1.6
With diphtheria bacilli	84	7	8.33	47	7	14.93	37	0	. . .

From this table it appears that since the erection of the new hospital in Giessen the mortality of diphtheria greatly and decidedly decreased except in regard to the cases of tracheotomy, in which the percentage remained the same, but with the introduction of the treatment by diphtheria antitoxine there was an immense decrease in mortality, not only in the simple cases, but also in those in which tracheotomy was performed. There can be no question that every case of diphtheria requiring tracheotomy is a very serious one, and the low percentage of death in these cases is very conclusive. Prof. Bose injected very large quantities of the serum. It also appears from

* In this connection it may be of interest to give some statistics of the antitoxine treatment of diphtheria in Japan, which I read while correcting the proof of this paper, in the London Lancet of March 7, 1896, p. 637. Professor Kitasato collected from reliable sources 26,521 cases of diphtheria in Japan previous to the antitoxine treatment, with 14,996 deaths (56 per cent); whilst of 353 cases treated from November 13, 1894, to November 25, 1895, with serum prepared under Dr. Kitasato's supervision, there were only 31 deaths (8.78 per cent). In 110 cases in which injections were made within forty-eight hours after the invasion all ended in recovery. On the other hand, of 33 cases treated after the eighth day of the disease, 11 were lost. Some of the patients were brought into the institute in a moribund condition, and six children died within five hours after admission, 6 more within ten hours; altogether 21 cases (two-thirds of the total mortality) were lost within the first twenty-four hours. Microscopic as well as culture examinations were made in every case and Dr. Kitasato's report only deals with the cases in which the Löffler bacillus was demonstrated to be present.

† Behring, loc. cit.

this table, and the same thing is better shown in many other statistics of cases occurring in private practice, that under the antitoxine treatment tracheotomy is less often required than formerly. It would seem that the larynx is less frequently involved, and that after tracheotomy has been performed the membrane is less likely to extend further down.

The next series of cases is that reported by Dr. Timmer* from the Children's Hospital in Amsterdam, and appears in the following table:

	Number of cases of clinical diphtheria.	DIED.		Number of cases operated upon.	DIED.	
		Per cent.	Cases.		Per cent.	Cases.
1883	87	47.0	41	. . . . .	67.0	. . . . .
1884	153	50.0	76	51	61.0	34
1885	79	50.0	39	58	66.0	37
1886	101	47.0	47	76	55.0	42
1887	133	48.0	64	98	56.0	55
1888	139	48.0	66	87	63.0	55
1889	230	50.5	116	145	67.5	98
1890	258	44.5	115	166	61.0	101
1891	221	43.0	95	148	60.0	89
1892	183	31.0	56	84	51.0	43
1893	197	41.0	81	97	53.0	51
Total (without antitoxine)	1780	44.6	796	1010	59.9	605
1894-1895 (antitoxine)	146	8.2	12	51	18	9
Bacillus present	117	7.7	9	. . . . .	. . . . .	. . . . .

Timmer also used large quantities of the serum. Among his cases in which tracheotomy was performed and in which recovery took place there were three children younger than a year. In 60 of these cases, 49 of them showing the presence of the bacilli, the membrane seemed to be circumscribed and thrown off after the injection. In other cases an enlargement of the membrane was seen. In none of these cases was there any striking change in the general symptoms, but only a relatively quick improvement. Collapse occurred in five cases after the injection, but all of these cases recovered. In 68 cases there was albumin in the urine, mostly only in traces, and it is doubtful if it was due to the injection. Exanthemata occurred in 30 cases. Post diphtheritic paralysis, principally of the uvula, occurred no oftener than under other treatment. There was no permanent evil result of the injection in any case.

A series of cases very recently published does not present this method of treatment in so favorable a light, and yet the reporter believes in this treatmeat and states that the next series of 100 cases, which is nearly completed, will show much more favorable results. These cases occurred in the Frankfurt Hospital and are reported by Adolph† and are tabulated as follows:

* Deutsche Medicinische Wochenschrift, 1895, page 607.
† Deutsche Medicinische Wochenschrift, 1896, page 41.

Day of the disease.	Cases.	Died.
First	10	0
Second	26	1
Third	27	4
Fourth	21	7
Fifth	5	0
Sixth and more	11—100	8—20

Twenty-seven of these children underwent tracheotomy, of whom 12 died (44.4 per cent); of the 73 other children 8 died (11 per cent). Eight of these children on whom tracheotomy was performed entered the hospital suffering from great stenosis and almost moribund. Tracheotomy was immediately performed, but they died soon after. All the cases presented a well-marked membrane and clear clinical symptoms of diphtheria and in 93 cases the Löffler bacillus was found.

The last series of cases which I shall mention is that reported by Boerger,* who treated 100 cases in which the clinical symptoms were those of diphtheria, and in all of which the bacillus was found. I emphasize this statement because it has been claimed that in these diphtheria statistics many cases are inserted because the Löffler bacillus is found in the throat, although there is no membrane present and no clinical signs except those of mild angina, and that the inclusion of these mild cases make the statistics more favorable to this method of treatment. I very much doubt if this criticism is a just one in any case, and it certainly does not apply to these statistics which I am about to give. On the other hand many cases of clinical diphtheria, which are very likely to run a mild course, were excluded from these statistics because the Löffler bacillus could not be found. In Roux's report 128 cases were thrown out as pseudo-membranous because no bacillus was found. The mortality among these was 8.5 per cent, while among the remaining 300 cases the mortality was 26 per cent.

In these cases of Boerger, when the clinical diagnosis of diphtheria was made the injection was given without waiting for the bacteriological diagnosis which was confirmatory in every case except seven, and these seven, although injected, are not included in this list. The result of treatment in these cases can be seen from the following table:

Day of the disease.	Cases.	Died.
First	7	0
Second	42	0
Third	25	1
Fourth	11	1
Fifth	7	2
Sixth	6	2
Seventh	1	1
Eighth	1—100	1—8

* Deutsche Medicinische Wochenschrift, 1895, page 870.

Sixteen of these cases underwent tracheotomy, 3 of them died. In these cases the amount of antitoxine injected was not nearly as great as in the two preceding series, and older methods of treatment of diphtheria were employed at the same time. Among these 100 cases there were 2 cases of slight paralysis of the lower extremities, 3 cases of slight paralysis of the ocular muscles, and 28 cases of paralysis of the uvula.

It would seem then that the mortality of diphtheria under the antitoxine treatment ought to be about 8 per cent, which is about the percentage obtained by Boerger, Timmer and Bose. Also among 185 cases treated by Baginsky since March, 1895, the mortality was 8 per cent,* and Rosenthal reports 220 American cases treated by antitoxine, with a mortality of 6 per cent, among them being 78 cases treated by himself, with a mortality of $2\frac{1}{2}$ per cent.†

Boerger's conclusions are: First, the serum exercises no injurious effect upon the organism; second, the serum exercises no unfavorable influence upon the kidneys, it rather shortens a case of albuminuria; third, the serum prevents extension of the local process; fourth, the serum even causes the disappearance of the diphtheria of the larynx without operative help; fifth, the serum has shown itself to be a specific remedy for diphtheria when combined with local symptomatic therapeutics, even in the most severe cases of diphtheria. Hennoch's statement that "the mild cases of diphtheria cure themselves, and nothing can be done for the severe cases" is no longer true in the light of our experience with diphtheria antitoxine.

I could quote many more statistics to you on this subject, but I should only weary you and not put the matter in any more convincing light. From a much larger mass which I have found in medical literature I have tried to impartially select a fairly large amount of what seemed to me to be reliable statistics.

Generally in medicine we employ a new drug on the recommendation of some eminent practitioner. When then an experienced clinician such as Baginsky‡ says that he is strongly in favor of the use of diphtheria antitoxine, and says further: "The reasons for this are to be found in the continual repetition of improvement and recovery of severe cases which previous experience indicates would have terminated fatally; and furthermore, in the outcome of an involuntary experiment with interruption of the use of serum for a period on account of failure in its supply. During this period the mortality of our patients immediately rose again to its former height." Between

* Baginsky, London Lancet, 1895, vol. 2, page 356.

† Rosenthal, International Medical Magazine, November, 1895, page 757.

‡ Die Serum Therapie der Diphtherie, Berlin, 1895.

March 15, 1894, and March 15, 1895, there were treated in Baginsky's service by antitoxine 525 children, with a fatality of 15.6 per cent. During the period of the forced interruption of the serum treatment, mainly August and September, 126 children were treated without antitoxine, with a fatality of 48.4 per cent. There was absolutely no selection of cases in either group.

And in this connection the remarks of Baginsky on the effect of the antitoxine treatment on that dreaded complication—laryngeal stenosis—are of interest: "Here again the observation of the individual cases of laryngeal stenosis, and more especially of those which do not come to the point of operation, speak to me more forcibly than the statistical figures. The surprising regression of the laryngostenotic respiratory phenomena, the freedom of breathing, the disappearance of the hoarse voice and the croupy cough, the euphoria of the children, the change in their general condition, so that two days after the injection they are sitting up in bed, playing and contented and observant of their surroundings; all of these things produce in him who has had before his eyes for years the hopeless picture of continually progressing laryngeal stenosis, in very truth ineffaceable impressions."*

Now the testimony of men who have used antitoxine in many cases is almost invariably in favor of it. Here and there a voice is heard strongly opposing it, but such opposition is usually based on an experience with very few cases. I have not found in my search through the literature anyone who has treated fifty cases of diphtheria with antitoxine who is opposed to it. All observers who have treated a greater number than fifty cases with it are either strong advocates of its use, or at least think the future of this method of treatment seems very hopeful.

It appears then from an examination of the statistics and upon the authority of those that have used the antitoxine treatment extensively in diphtheria, that this method of treatment is superior to any hitherto employed. Furthermore, the longer this treatment is employed and the stronger the antitoxine used the better are the results obtained. It would appear, then, as though we had not reached the limit of efficiency of the antitoxine treatment. Of course this method does not and should not prevent the employment of such measures of local and general treatment as experience has proved to be of value, and which Dr. Ward will lay before you this evening.

* Welch, loc. cit.

Twenty-third Annual Meeting.

The Association of the Alumni of the Albany Medical College will hold its twenty-third annual reunion on Tuesday, the 14th of April. The order of exercises for the day will be as follows:

- 9.00 A. M.—Reception in library. Coffee and sandwiches will be served.
10.30 A. M.—Annual meeting in Alumni Hall.

PROGRAM.

1. Faculty address of welcome, Prof. S. B. Ward, M. D.
 2. Minutes.
 3. Reports.
 4. President's address, Dr. Theobald Smith ('83).
 5. Report of historian, and class historians of '56, '66 and '86.
 6. Election.
 7. Miscellaneous business.
 8. Reading of letters, etc.
 9. Impromptu speeches.
- 3.00 P. M.—Commencement exercises at Harmanus Bleecker Hall. Address by Rev. W. W. Battershall, D. D., Albany.
- 8.00 P. M.—Alumni dinner at the "Kenmore."

Graduates of the college are urged to attend this reunion and are assured that the committees in charge will do everything in their power to make the occasion a pleasant and profitable one to those who attend. They are requested to notify the corresponding secretary, Dr. J. B. Stonehouse, 5 High street, Albany, of their intention to be present, or, if unable so to do, to send some word of greeting which may be read at the meeting, and to accompany this with a photograph for the alumni collection, if they have not already done so. No pains will be spared to make the dinner enjoyable. It will be served in the handsome dining room of the "Kenmore" and will be a first-class course dinner enlivened by songs and good after dinner speeches. Tickets for this dinner may be procured in advance, or on alumni day, or at the hotel in the evening, at one dollar and a half each by alumni, which is but about half the actual cost of the dinner. In order that places may be provided for all who attend, it is greatly desired that those who can do so, notify the corresponding secretary of their intention to be present.

Information Relating to Diphtheria Antitoxin.

The health department of New York city desires to direct the attention of physicians to some important modifications and improvements which have been made in the preparations of antitoxin serum, which it is now able to furnish for the prevention and treatment of diphtheria.

As the result of some investigations carried on in the bacteriological laboratory of the health department, which have greatly perfected the methods of production of diphtheria antitoxin, it has been possible to prepare antitoxic serum of much greater power than that which has previously been in use. The curative value of any preparation of antitoxic serum is, of course, due, not to the amount of serum, but to the amount of antitoxin which the serum contains, and investigations seem to show that the disagreeable symptoms sometimes occasioned by the use of diphtheria antitoxin are due, not to the antitoxin, but to the horse's blood serum in which the antitoxin is present in solution. It naturally follows that more concentrated preparations, in the use of which only small doses are required (2 to 5 c. c.), will diminish materially the frequency with which the rashes and other symptoms follow the administration of the remedy.

The preparations of antitoxin hitherto furnished by the health department are known as Nos. 1, 2 and 3 (Behring's standard), and correspond to Nos. 1, 2 and 3 of Behring's preparations.

No. 1 contains sixty (60) antitoxin units to each cubic centimeter of the serum, or six hundred (600) units in each vial.

No. 2 contains one hundred (100) antitoxin units to each cubic centimeter of the serum, or one thousand (1,000) units in each vial.

No. 3 contains one hundred and fifty (150) antitoxin units to each cubic centimeter of the serum, or one thousand five hundred (1,500) units in each vial.

The health department is now able to furnish much more concentrated preparations than No. 1 and No. 2, and has, therefore, decided to discontinue the preparation and use of these weaker serums. Hereafter diphtheria antitoxin will be furnished in the following grades and amounts:

GRADE No. 3.—Vials contain 10 c. c., 150 antitoxin units (Behring's standard) to each c. c., or 1,500 units,	- - \$1.50
GRADE No. 3a.—Vials contain 5 c. c., 150 antitoxin units (Behring's standard) to each c. c., or 750 units,	- - - .75
GRADE No. 4.—Vials contain 5 c. c., 200 antitoxin units (Behring's standard) to each c. c., or 1,000 units,	- - 1.25
GRADE No. 5.—Vials contain 5 c. c., 300 antitoxin units (Behring's standard) to each c. c., or 1,500 units,	- - - 2.00
GRADE No. 6.—Vials contain 5 c. c., 400 antitoxin units (Behring's standard) to each c. c., or 2,000 units,	- - - 3.00

It is at once apparent that preparations of antitoxic serum which contain a large amount of antitoxin to each cubic centimeter are more desirable than those containing a smaller amount, and the dose

required is proportionately less and the disagreeable symptoms following its use will be relatively less frequent. The highest grade preparations, however, are much more difficult to produce, are necessarily more expensive, and at present, even with approved methods, can be produced only in limited quantities. Therefore, the department, as before, furnishes the serum in a number of different strengths at prices as nearly as possible at cost.

The average curative dose of diphtheria antitoxin is about one thousand (1,000) units; but for very severe cases or croup cases, or those in which the serum is not administered until the third day or later, one thousand five hundred (1,500) or two thousand (2,000) units are often required, and sometimes the dose must be repeated, so that altogether from four to six thousand units may be required in a single case. Full directions as to the use of the serum accompany each vial.

The new preparations of antitoxin serum will be gladly furnished, as heretofore, without charge to all public hospitals, dispensaries and charitable institutions in New York city on application, and they can be obtained free by physicians at most of the depots established for the supply of diphtheria culture tubes, for use among those persons who are too poor to pay for the remedy. In such case the physician in attendance is required to fill out a blank, to be obtained at any of the stations, giving particulars in regard to the case and the ultimate result of treatment. Medical inspectors of the health department will also be sent on application to administer antitoxin to any case of diphtheria, under the supervision of the attending physician.

The health department desires to encourage the use of antitoxic serum for the prevention of diphtheria, as the experience with its use for this purpose has been most satisfactory. From one hundred (100) to three hundred (300) units, according to age, are required to confer immunity. The immunity thus produced ordinarily lasts for a period of at least four weeks. With the new and strongest preparations of antitoxic serum, only very small quantities of serum (from six to fifteen minims) are necessary for the production of immunity.

(Signed) GEO. B. FOWLER, M. D.,

Commissioner of Health.

Approved by the board of health at a meeting held February 11, 1896.

CHARLES G. WILSON,

EMMONS CLARK,

President.

Secretary.

Address all communications or orders for Diphtheria Antitoxin to the Health Department, New York City.

Obituary.

Dr. Henry M. Burtch.

Dr. Harry Mercein Burtch was born in Providence, R. I., May 26, 1859, being the son of John D. Burtch and Marietta J. Callender. His boyhood was spent in Sheffield, Mass., and in the fall of 1880 he entered the Albany Medical College, from which he was graduated March 1, 1882. He began the practice of his profession at East Canaan, Ct., removing to Salisbury, Ct., in 1885, where he resided at the time of his death. In 1886 he married Miss Elizabeth Hulbert of Chicago, Ill., by whom he had three children, one of whom died during the spring of 1895. His death occurred February 12, 1896, the cause being acute myelitis.

At the time of his death he held the position of County Medical Examiner. The writer desires to put on record the fact that Dr. Burtch was an unassuming, well-posted and thoroughly practical physician, ever loyal to his friends and his patients. His motto seemed to be, "Hew to the line, let the chips fall where they may." Apparently unmindful of the hardships of a country physician's life, he seemed to be perfectly contented in doing his best. A whole community turned out at his funeral to pay its respects to the memory of a respected citizen and an honorable physician.

HORACE R. POWELL, A. M. C., '82,
Poughkeepsie, N. Y.

Dirty Thermometers.—Those who are constantly preaching the germ causes of disease are the very fellows who many times are as careless as their unbelieving friends. How frequently do we see physicians take the temperature of their patients, regardless of the existing disease, wipe the instrument with their handkerchief, which is the linen most liable to be full of germs, or a towel, or even use the sheet, and carefully place it away in a case prepared with a small amount of absorbent cotton in the bottom to keep from breaking, and unintentionally preserving the germs from time to time, to be conveyed to the next unfortunate who may be the first patient called upon. This seems to be a very simple thing to discuss, but any reasonable person can readily see the necessity of having his thermometer thoroughly cleaned every time it is used. It should be washed with soap and water, and if any cotton is used in the bottom of your case, let it be sublimated cotton, and occasionally renew it.—*Medical Record.*

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REPRESENTING THE
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HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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ANNOTATIONS.

Preparatory Medical Education.—Another bill whose object is to change the present medical law, and known as the Stanchfield bill, is now before the Assembly at Albany. The bill aims to change the requirements for preparatory medical study, so as virtually to remove these requirements altogether; that is to say, the law will name the general subjects in which proposed medical students shall be examined by the faculties of the different colleges, but the amount of knowledge upon these subjects which such students must possess will be determined by the faculties of the medical schools. Some of our medical colleges assert that the present law does not secure any higher grade of education among medical students by reason that, on the other hand, it tends to drive medical students from the state. Apropos of this question, Drs. A. Walter Suiter, M. J. Lewi and J. M. Winfield, the committee on legislation of the New York State Medical Society, have sent a communication to the members of the society throughout the state, in which they say:

“Should this bill become a law, preliminary education of medical students, on which New York has justly prided itself, will become a farce. Our State Medical Society year after year has protested against any such change in the law, and has warmly supported the existing protections against incompetence in practitioners, or against mercenary motives in those who would make cheap the degree of M. D. There would be little objection to the four-year course proposed were it added to the existing law, but here, it seems, designed chiefly to cover up and carry riders against which the best medical sentiment of the state will be unanimous.

“You will note that section 2, while naming several studies for examination, prescribes no standards for passing, and thus leaves every

medical school absolutely free to matriculate every applicant who goes through the form of an examination.

“Section 3 is so worded that any one put on the list of matriculants by any medical school becomes exempt from examination, and each matriculating officer is left free to determine for himself what are reputable colleges or high schools of the first grade, thus evading entirely the state control of standards.

“Section 5 does away with all the safeguards as to age, moral character and satisfactory instruction that have been provided, after a generation of study and experience by those having at heart the best interests of the medical profession in New York.”

“Section 6 wipes away the restrictions for matriculants until next year, while section 7, under an indefinite blanket clause, can be construed as authorizing the disregard of many of the most essential features of the present wholesome laws.”—*Medical Record*.

Doctors and Druggists Unanimous for Once.—Mr. Harry Wise of Chattanooga is at present enjoying what most druggists would consider a luxury—the approval of his fellow-pharmacists who admire his “spunk,” and the endorsement of the medical society of the town, whose interests he has recently championed.

Receiving a prescription from a regular practitioner for one grain of atropine in a given quantity of water, the compound was properly labeled, but no reference to the poisonous nature of the medicine appeared on either prescription or label. After part of the solution had been used locally, a young child got hold of the vial, swallowed the contents and died. The father brought suit for \$10,000, on the ground that the druggist had violated his duty in failing to affix a poison label.

The court charged that it was the druggist's duty to label the vial “Poison,” without regard to the doctor's omission of the word on the prescription, and on this ground a verdict of \$1000 was brought in against Mr. Wise. On further reflection, however, the court granted a new trial, recognizing that the carelessness of the child's mother, and not the omission of the druggist, was the proximate cause of death.

The Chattanooga Medical Society upholds Mr. Wise by formal resolution. The doctors realize that if they write the word “Poison” on every prescription containing a toxic ingredient, or if the druggist affixes a poison label to all such prescriptions, no small part of their time will be passed in the pleasant occupation of soothing and mollifying the perturbed patient.

But the law is law, and if the state statute requires a poison label to be affixed to all vials containing poison, the druggist will have to

reach some understanding with his medical patrons and comply. Otherwise, fancy the indignation of the medical men, should the druggist apply poison labels when not instructed so to do!—*Bulletin of Pharmacy*.

State Board of Undertakers.—The undertakers, usually so demonstratively meek and with a business training calculated to repress outbursts of temper, are now clamoring for a state board of control for the higher and more æsthetic performance of their various and lugubriously officious duties. None but qualified practitioners are to be admitted to the guild. Each applicant must stand the test of an examination, mental, physical and moral, for the obvious reason that the corpse is forced “by circumstances over which he has no control” to rely entirely on the ability of the practitioner to make him a properly presentable object lesson to the mourners.—*Medical Record*.

Elsner's Method of Early Bacteriological Diagnosis of Typhoid Fever.—Elsner announces the discovery of a means to distinguish the typhoid bacillus in the evacuations and differentiate it from the bacillus coli in twenty-four to forty-eight hours. He experimented with bouillon made from fish, from reptiles, beets and all kinds of vegetables, until he found a medium that will only make cultures of the typhoid bacillus and bacillus coli, and these cultures present such characteristics that they can be differentiated with the naked eye. His medium is prepared as follows: He boils gelatin with a decoction of potato and adds a triturated solution of soda in sufficient quantity to produce the same degree of aridity as in Holtz's medium. This he filters and sterilizes. The liquid is then poured into Erlenmeyer tubes and completed by the addition of iodide of potassium, in a ratio of 1 to 100. The culture is then made and poured out on plates. In twenty-four to thirty-six hours there are colonies of bacilli coli, and in forty-eight hours the typhoid colonies develop, easily recognized as small transparent points finely granulated in the midst of the luxuriant brownish growth of the bacilli coli. This medium is exceedingly susceptible to cultures, experiments showing that the typhoid colonies would develop when the liquid only contained one part culture to eight thousand million parts liquid. Other scientists who have experimented with this new medium find it all that Elsner claims. They also call attention to the fact that the typhoid bacilli diminish in numbers as convalescence progresses, and if their numbers keep up, a relapse may be expected.—*The Journal of the American Medical Association*.

Medical Expert Testimony.—The special committee appointed at the last meeting of the Medical Society of the State of New York to

report upon the most feasible plan by which the present methods of introducing medical expert testimony can be improved, respectfully submit the following report:

“ Your committee recognizing the difficulties which lay in the way of formulating any plan within the constitution of the state, have corresponded quite extensively with the qualified members of both the legal and medical professions, and believe that in submitting the following preamble and resolution they present a consensus of such opinion held with reference to this subject which, under present constitutional restrictions, affords the best method of obtaining medical expert testimony.

“ WHEREAS, The present method of obtaining medical expert testimony tends to lessen the value of such testimony and to bring the medical profession into disrepute; therefore, be it

“ *Resolved*, That the Medical Society of the State of New York would recommend the enactment of a law by the legislature providing for the appointment of experts by the courts, and that only physicians of repute in the particular branch of medical science to which the question calling for expert opinion relates shall be appointed; that the function of the experts so appointed shall be advisory, and the number thus appointed shall be such as to adequately represent the court and both sides of the question at issue, as in the judgment of the court shall seem necessary; that the experts so appointed shall have full and free access to all the evidence in the case, as well as access to the plaintiff or defendant in person, as the case may be, if the issue involves his mental or physical state; that the expert shall submit to the court for transmission to the jury a report in writing setting forth their conclusion and the facts in evidence upon which such conclusion is based; that the cross-examination of such experts shall be limited to the facts and opinions embraced in their testimony as embodied in their report, and that their compensation shall be fixed by the courts at a rate that is reasonable for professional services of such a nature.

“ Most respectfully submitted: J. B. Ransom, M. D.; Carlos F. MacDonald, M. D.; H. E. Allison, M. D.; S. B. Ward, M. D.; E. D. Fisher, M. D., Committee.”—*Medical Record*.

Balling Hoofs.—One of the troubles doctors, especially country practitioners, have to contend with is the balling of the hoofs of their steeds with snow. A Detroit medico announces that he has discovered a remedy therefor in glycerin, which is applied to the under side of the hoofs and to the shoes just prior to leaving the stable.—*The Medical and Surgical Reporter*.

Physicians in North Carolina Taxed.—There are 1500 registered physicians in the State of North Carolina, each of whom pays a state tax or license fee of \$10 per annum; 465, or about one-third, are members of the State Medical Society. The next Legislature will be asked to appropriate the amount of this tax, \$15,000, to the establishment of a state vaccine farm, with provision also for the cultivation of diphtheria antitoxin.—*Medical News*.

Some General Statistics.—The 71 races inhabiting the world communicate with each other in 35,004 different tongues, and confess to about 15,000 religions. The number of men and women is nearly equal, the average longevity of both sexes being only thirty-eight years, about one-third of the population dying before the age of seventeen. Moreover, according to the most careful computation, only 1 person in 100,000 of both sexes attains the age of one hundred years, and only 6 to 7 in 100 the age of sixty. The total population of the earth is estimated at about 1,200,000,000 souls, of whom 35,214,000 die annually—i. e., an average of 98,848 a day, 4,920 an hour, and 67 a minute. The annual number of births, on the other hand, is estimated at 36,792,000—i. e., an average of 100,800 a day, 4,200 an hour, 70 a minute.

Generally, taking the entire world, married people live longer than single, and those who have to work hard for their living longer than those who do not, while also the average rate of longevity is higher among civilized than uncivilized races. Further, people of large physique live longer than those of small, but those of middle size beat both.—*Medical Record*.

The Discoveries of Kitasato.—Dr. Behring, it was announced in Germany on the 28th inst., has produced an antitoxine serum for Asiatic cholera. But it appears that he must yield the credit for the discovery to his former associate, Dr. Kitasato, now laboring in Japan, who declared a month ago that he had perfected an antitoxine serum for this disease. Both of these eminent bacteriologists were pupils of Prof. Koch of Berlin, where Dr. Kitasato studied for seven years, and where he was associated with Behring in conducting the experiments which finally gave to the world the new remedy for diphtheria.

The cholera antitoxine is not the only curative serum which Dr. Kitasato has produced in the extensive laboratory which is maintained by the Japanese government for his use at Tokio. We referred last year to Kitasato's inquiry in Hong Kong, to which city he was sent as a representative of the Japanese imperial board of health, concerning the origin and nature of the disease called "plague" or "black death," an epidemic of which was then in progress. He discovered the germ

or bacillus of this ancient and dreadful malady, and he has since produced a curative serum for the treatment of it. Experiments have proved, he asserts, that serum is effective when injected within six hours after the beginning of the attack. But this is not all. He announces that he has detected the characteristic bacillus of leprosy, and has produced the disease by inoculation with this germ, and by the immunizing process has obtained an antitoxine serum by which leprosy can be cured.

Another discovery must be added to his list. The Japanese soldiers returning from China and Formosa suffered not only from cholera, but also from an abdominal typhus fever of malignant kind. He has found the bacillus of this disease, and is engaged in producing a serum for the treatment of it.

In his laboratories he has a large number of horses, sheep and other animals undergoing that process of immunization, with the details of which all those who are interested in the production of diphtheria antitoxine are now familiar, the process which has been used for months in the laboratory of the New York board of health. There he obtains the antitoxines of diphtheria and lockjaw—both of which is now in use in Europe and America—as well as the new antitoxines of cholera, leprosy, and malignant abdominal typhus.

The recent great epidemic of cholera in Japan furnished an abundance of material for bacteriological experiment. The number of cases is reported officially to have been 56,367, and the mortality (39,721) was exceptionally severe, or about 70½ per cent. In a group of 193 cases treated with this curative serum the mortality was reduced to 33 per cent. While these figures are encouraging, they do not seem conclusive, but it is stated that nearly all of 64 persons who did not recover were brought to the hospital in the last stages of the disease, many of them dying an hour or two later. In such cases no remedy could be effective. Dr. Kitasato says, it is reported, that the serum is a positive specific when injected promptly after the beginning of the attack. Such an assertion has great weight when it's made by a man so eminent in his scientific province. We may be confident that the serum has been produced by a careful and scientific use of the process followed in the manufacture of diphtheria antitoxine, and that it has been applied properly by a competent person. The experiments of Ferran in Spain were not made under such conditions; indeed, the virtue of serum from immunized animals was then unknown, nor is it clear that the more recent work of Haffkins in India has the scientific basis. At another time we may have something to say about Kitasato's treatment of tuberculosis, as to which the only reports thus far published are somewhat ambiguous and probably misleading.

If it shall be shown conclusively by the test of continued use that this Japanese bacteriologist has really produced curative antitoxines for both Asiatic cholera and the "black death" or "plague," there will be a curious fitness in the discovery in the far East of these remedies for two old and dreaded diseases which were born in the East and have their homes in the eastern lands from which the infection has been carried to Europe and the new world so many times and with consequences so deplorable.—*N. Y. Times*.

University of the State of New York Medical Examinations.—Examinations for license to practice medicine in the State of New York will be held as follows: Dates, 1896—April 7–10, May 19–22, June 16–19. Places—New York, Albany, Syracuse, Buffalo. Each candidate is notified as to exact place. Daily programme—Tuesday, morning, 9:15–12:15, anatomy; afternoon, 1:15–4:15, surgery. Thursday, morning, 9:15–12:15, obstetrics; afternoon, 1:15–4:15, pathology and diagnosis. Friday, morning, 9:15–12:15, therapeutics.

Alkalinity of the Blood and Microbic Infection.—Dr. Fodor records a number of experiments showing the influence of the alkalinity of the blood on diseases produced by microorganisms. Four series of experiments on animals, which show clearly that by the administration of alkalies (sodium bicarbonate by the mouth or by subcutaneous injection) the power of resistance against infection with cultures of anthrax bacilli is greatly increased. The normal alkalinity of the blood was determined by the examination of seventy-six rabbits, and four experiments are reported showing the increase in the alkalinity of the blood which occurs after the administration of sodium bicarbonate. The author then records the results of a large number of observations on the alkalinity of the blood in rabbits after infection with the bacilli of anthrax, cholera, typhoid fever, tuberculosis and erysipelas. These observations show that in the living organism after infection with certain bacilli there is first an increase of the alkalinity of the blood and then a diminution of the same, more or less. If the infection is fatal, the diminution of the alkalinity is marked and progressive; if not fatal, the diminution is slight, and is followed by an increase of alkalinity which then remains high permanently. Thus there exists a connection between the pathological action of certain bacteria and the alkalinity of the blood. Those rabbits having the greater alkalinity of the blood, as well as those in which the alkalinity of the blood is increased to a greater extent after infection, have greater power of resistance against certain infectious organisms (anthrax bacilli) than the rabbits in which the alkalinity of the blood is less. It appears,

therefore, that the degree of alkalinity in the blood as well as the power of the organism to resist this alkalinity with corresponding intensity after infection, is of essential influence upon humanity.—*The Dietetic and Hygienic Gazette.*

Practical Disinfection of Rooms.—The frequency with which second and third cases of scarlet fever appear in houses that have been disinfected by the inspectors of sanitary authorities, casts grave doubts on the efficiency of the procedure usually adopted, despite its official sanction. Striping the walls, lime-washing walls and ceilings, and scrubbing wood-work and floorings with soap and water are indeed effectual enough, and to these when thoroughly done, we are disposed to ascribe any successful results rather than to the more technical process of so-called disinfection by sulphur fumes, which is little better than a superstitious rite or incantation short of the religious character it had in the mind of Ulysses when he “fumigated” the halls desecrated by the massacre of his wife’s suitors after removing the corpses and washing away the blood with a promptness that precluded all thought of other than moral pollution. But in the light of bacteriological experiments, dry sulphurous acid fumes, whether generated by burning sulphur or carbonic sulphide, or, as has of late become the fashion, by opening cylinders of the compressed gas, are, for all practical purposes, useless. The gas would act as a fairly powerful germicide on articles or fabrics previously saturated with water, but its bleaching action precludes its employment in this way with colored materials, carpets, or curtains, and it is as what is called an “ærial disinfectant” that it holds its ground in popular esteem. But ærial disinfection is an absurdity; no one wants to purify the foul air, which is easily enough removed by simple ventilation. In disinfecting a room the true aim is to kill the germs contained in the dust on ledges or in the crevices between the boards, or adhering to the walls and other surfaces, and the dry gas is powerless for this, which is best attained by a sublimate solution of the strength of 1 part in 1,000, or by lime (not white) washing, providing the lime be fresh burnt and caustic; the carbonate or chalk used in white washing under the name of whiting, and into which lime is converted by long exposure to the air, being inert. The series of experiments on infection and disinfection by various means of wall paper distempers, and other wall surfaces, conducted by Dr. Cronberg, under the direction of the late Professor Uffelman at Rostock, showed that subsequent scrapings were invariably and almost instantaneously sterilized by washing or spraying with the sublimate solution, and equally so by lime-wash after the lapse of twelve to twenty-four hours. The danger of corrosive

sublimate is, we believe, exaggerated, for the smallest fatal dose for an adult being probably three to five grains, equal at least to a quarter of a pint of the solution, accidental poisoning with the solution is practically not probable, and as further safeguard it might be colored with indigo or "laundry blue." Carbolic acid, which is sold without restraint, and is in universal use, is more dangerous on that account and, indeed, frequently employed with suicidal intent and with fatal effects. In France, Germany and Italy sublimate has nearly superseded all other disinfectants, and its neglect in this country is inexplicable. As to carpets, curtains, bedding and clothing, all that are capable of being washed should be plunged in a copper of boiling water for a quarter of an hour, and such articles as would be spoiled by this treatment should be disinfected by steam.—*London Lancet*.

Propagation of Tuberculosis by the Faeces of Cattle.—The authors have already published experiments showing that tubercle bacilli, when ingested by the dog, traverse his digestive tube and are found intact in the fæces.

Cattle, however, offer a fertile soil for the germ, and their digestive tract is admirably adapted to retain and absorb it. The paunch, with a capacity of nearly 250 litres, permits a prolonged accumulation of ingesta, while its many folds and deep honey-comb cells furnish convenient resting places for microbes.

Many experimenters have proved that tubercle bacilli passing into the intestine are absorbed by the villi, but no efforts have been made to ascertain whether all or only part of these germs are thus removed from the gut. If not all, then it would seem possible for a phthisical animal, swallowing his pulmonary discharges, or eliminating tubercle bacilli from the surface of ulcerating Peyer's patches, to contribute to the dissemination of the disease through his fæces. With this thought in view, the following experiments were made:

On the 3d, 4th, 5th and 6th of June at midday, a meal was fed to a yearling bull, consisting of bread and one-fourth of a cow's lung rich in tubercle bacilli. From the 6th to the 10th inclusive, they collected, morning and evening, 200 gm. of fæces, which they diluted in 100 c.c. of water. The filtrate from this product after standing 12 hours, was injected into the auricular veins of rabbits to the amount of 2 c. c. for each. Fifteen were thus injected. Two died of septicæmia, one of intoxication and the twelve others became tuberculous. Two died at the end of a month, presenting at autopsy a miliary tuberculosis of the lungs. The eleven surviving ones were killed between 9th and 10th of July, and showed tuberculous indurations scattered through the lungs, liver, spleen and kidneys. In addition to these inoculations, a

microscopical examination of the fæces of the bull was made daily, resulting in every instance in the discovery of the Koch bacillus.

These experiments seem to demonstrate that the fæces of cattle are as capable of propagating tuberculosis as are the sputa of man.—*The Am. Med. Surg. Bul.*

Behring on Serotherapy.—For the first time Professor Behring has replied to the critics of antitoxine and supports the efficacy of this discovery by innumerable statistics (*Deutsche Med. Woch.*, 1895, No. 38). He claims that even statistics do not do it justice, as it is used in perhaps the most desperate cases, and the mortality percentage is therefore higher than it should be in proportion. But even allowing for countless errors, the percentage is a great gain over the past. The mortality in Berlin in 1895 sank to 15 per cent, two-thirds less than it had averaged during the seventeen years preceding, while the character of the diphtheria was more serious than at any time since 1886. Of 10,312 cases, 5833 were treated with serum, with a loss of 9.6 per cent, while 4479 cases treated without it showed a mortality of 14.7 per cent. The percentage fell to 10.3 per cent in the Contagious Disease Institute, where the serum was exclusively used. He asserts that the question now is: Shall it be used to secure immunity. For this purpose he recommends one-half of a regular dose. He says that the works can now supply 100,000 doses a month, which barely keeps pace with the demand from Europe and America. Improved methods have enabled the dose to be concentrated from 5 c. c. to 3 and 1 c. c. He regrets that the specific for tuberculosis is not yet all that was hoped for it, but congratulates Ransom on his cholera serum and Knorr on his for tetanus.—*The Journal of the Medical Association.*

The “Surgeons’ House” at Pompeii.—The Medical Press and Circular has made the following condensed statements regarding the recent articles of Prof. Nicholas Senn on his medico-historic researches in Southern Italy:

“Nearly two thousand years have elapsed since the Pompeiian surgeons practiced their art in their ill-fated town, and yet many objects of interest to the surgeon have since then been brought to light during the recent excavations undertaken for the purpose of exposing the ruins of Pompeii. In an interesting paper on this subject in the last number of the Philadelphia Medical News, Dr. N. Senn gives a description of a recent visit that he made to the ruins of Pompeii and the Naples Museum of Pompeiian Surgical Instruments. The instruments were found in a house which has been called the “Surgeons’ House.” They are made in bronze and one of them shows

high degree of workmanship. Some of them indicate also the destructive effect of heat and oxidation, while others are in a state of excellent preservation. Careful search was made among the instruments for traces of needles or any appliance which would indicate that at the time wounds were sutured. But nothing of that kind was found. The collection, moreover, did not contain any saws, trephines, chisels or instruments for operations on bones. Again, with the exception of the specula and catheters, it is curious to note that the instruments were of a diminutive size in comparison with those of less remote and modern times. Judging from his instruments, the Pompeiian surgeon plainly confined cutting operation to bleeding, cupping, extraction of foreign bodies, and the opening of the abscesses. Dr. Senn concludes his paper by pointing out that the surgeon of Pompeii must have been a man of means and good social position; the position of his house in the most aristocratic part of the city and its capaciousness both testify to this fact. A liberal income, therefore, probably rewarded his labors and placed him in a position to enjoy the luxuries of life, which seem to have been the main object in life of the mass of the Pompeiian people before the destruction of their city.

To Remove Disagreeable Taste of Cod-Liver Oil.—Add to 100 grams of oil (Duquesnil's preferred) 1 gram essence of eucalyptus. Pavesi's process is to take 400 grams oil, 38 grams roasted and ground coffee, and 10 grams pulverized animal black. Heat this combination to 60 degrees C. in a water bath for fifteen minutes, in a tightly closed receptacle. Let it stand two or three days, shaking it up occasionally, and then filter. This results in a limpid, amber oil with the perfume and taste of coffee.—*The Journal of the American Medical Association.*

REVIEWS AND BOOK NOTICES.

Therapeutics of Infancy and Childhood.—By A. JACOBI, M. D. —*J. B. Lippincott & Co., Philadelphia, 1896.*—Pathology lends itself to scientific presentation so much more readily than does therapeutics that in most of the recent medical works, especially in those on special subjects, the former is elaborated at the expense of the latter. A book on the therapeutics of infancy and childhood written by a man whose mind is pre-eminently logical and scientific, and whose fame is not limited even by the wide boundaries of the country in which he lives, is, therefore, a valuable addition to

medical literature. It is a pleasure to read a book which shows upon every page that it is the result of many years of careful and accurate observation of an immense clinical material.

After three excellent but brief chapters on the feeding of sick children, the treatment of the newly born and general therapeutics, there follow in the order named chapters on the constitutional diseases, the infectious diseases, diseases of the digestive organs, of the genito-urinary organs, of the respiratory organs, of the organs of circulation, of the nervous system, of the skin, of the ear, of the eye, of the muscles and of the bones and joints, and finally in an appendix, the anti-toxine treatment of diphtheria and the best substitute for mother's milk is discussed. Space does not admit of an extended review, but it can truly be said that each section is crowded with valuable generalizations of the wise practitioner and clinician, and in each disease the general principles of treatment are laid down plainly and comprehensively. As he says in his preface, Dr. Jacobi is a believer in medicines, but each drug which he recommends has stood the test of actual extended personal experience, and the manner of its operation and the reasons for its administration are clearly stated. There is no attempt to dogmatically enumerate the drug or drugs best suited for each symptom and nowhere in the book is a prescription to be found. There can be no doubt that this book will be of the greatest value not only to specialists in children's diseases but also to every general practitioner, who will find in it a wise and clear guide in the treatment of a difficult class of cases.

Caspari's Pharmacy—A Treatise on Pharmacy.—For Students and Pharmacists. By Charles Caspari, Jr., Ph. G., Prof. of the Theory and Practice of Pharmacy in the Maryland Col. of Phar., Baltimore. In one very handsome 8vo. vol. of 680 pp. with 288 illus. Cloth, \$4.50. Phila., Lea Brothers & Co., Publishers, 1895.

The author is widely known as joint editor of *The National Dispensatory* and as Professor of Pharmacy in one of the foremost pharmaceutical colleges in America. Being likewise engaged in the active practice of his own profession he is exceptionally qualified to prepare a work of the highest merit, both as a text book for students and as a practical reference for pharmacists in all the multifarious details of their operations. The present volume has been drafted on a plan judiciously excluding all obsolete and unnecessary matter, and it therefore furnishes a well-selected knowledge of its subject within a convenient space. It deals with both the theory and practice of its art, is thoroughly modern in every detail of manufacturing and dispensing, and is richly illustrated with illustrations, principally

original. It has the advantage also that almost every form of pharmaceutical apparatus used in the art is illustrated in the work; so that the young graduate of pharmacy who may be wishing to buy a stock in trade can intelligently choose which of a variety of appliances is best suited to his purpose and means.

The subjects treated in this book have been grouped by the author under three distinct headings, as follows:

Part I comprises General Pharmacy, which includes the study of weights and measures, specific gravity, the application and control of heat, mechanical subdivision of drugs and the methods of solution and separation, together with a classification and description of the various plant products and solvents used in pharmacy.

Part II treats of Practical Pharmacy. This involves a study of the official galenical preparations, together with the many operations of the dispensing counter. It has been the author's aim to explain as clearly as possible the various processes and apparatus met with in this department, and to point out difficulties likely to be encountered, as well as the remedies therefor. All suggestions made have been tried and verified by the author before offering them, so that statements made are based on actual experience.

Part III is devoted to Pharmaceutical Chemistry, the study of which is of paramount importance to every pharmacist. While the subject is a very comprehensive one, and undoubtedly entitled to an extensive treatise, it has been confined in this work to such compounds as are either officially recognized in the United States Pharmacopœia or are of special interest to pharmacists.

By a careful analysis of the working formulas of the Pharmacopœia it has been thought possible to render that excellent book more useful to students as well as pharmacists in general. The Pharmacopœia contains a number of valuable tests and assay methods which are unintelligible to the average reader, but which can be made available and interesting by a series of explanations. As such explanations thus far have not been offered in any of the treatises on pharmacy in the English language, the attempt has been made to supply this want.

This book is pre-eminently intended to be one of instruction and an aid in the study and use of the Pharmacopœia. The object constantly in view was to answer, if possible, the many questions of why and wherefore with which students and practicing pharmacists are almost daily confronted.

Of the numerous treatises on pharmacy, this one by Caspari is the most modern and the best.

READING NOTICES.**The Insomnia of Typhoid Fever.**

In the course of typhoid fever, and especially during the first stage, the restlessness and sleeplessness are frequently present and demand relief. The depressing effects of lack of sleep are acutely felt in this disease, which is of itself attended with more or less profound exhaustion of the vital powers. It is generally recommended that opiates be avoided as much as possible in these cases, and Sulfonal is considered by many as an ideal hypnotic. Dr. J. P. Hillegass of Philadelphia (*American Lancet*) recently has emphasized the value of this remedy and attributes no small share of his successful results in typhoid to its employment. In one of his cases, that of a man eighty-four years old, the patient was unable to sleep and would lie awake all night. Having tried opiates and chloral without effect, the author resorted to the use of Sulfonal in fifteen grain doses every evening, and never failed to obtain the desired effect—a natural and undisturbed night's rest. So favorable was the influence of this drug on the course of the disease that it was continued until the period of recovery.

Another equally striking case is related, that of an old lady, sixty-five years, suffering from typhoid fever with marked insomnia. Sulfonal in fifteen grain doses in half a cupful of hot water at night was regularly administered until convalescence set in, and never failed to relieve this troublesome symptom. On the ground of his experience in these and other cases, the author considers Sulfonal as an efficient, safe and reliable hypnotic in cases of typhoid fever accompanied with marked restlessness, delirium and sleeplessness. According to Dr. G. R. Lockwood (*Manual of the Practice of Medicine*, 1896), if drugs are needed for the nervous symptoms, Phenacetine (gr. 5 q. 3 h.) will relieve the headache and restlessness, while Sulfonal will promote sleep. In administering this drug care should always be taken to give it in an abundance of some warm fluid, in order to insure a prompt and satisfactory effect.

A Safe Antipyretic and Analgesic for Children.

In the *American Text Book of Diseases of Children*, edited by Dr. Louis Starr, a long list of diseases is given in which phenacetine may be employed with advantage as an antipyretic or analgesic. The following citations from this work will, however, suffice to illustrate its value in pediatric practice. In his remarks on antipyresis in measles, Dr. Starr says: "Antipyretics are still on trial, but the safest is Phenacetine. This may be administered in an initial dose of one grain for any age between two and six years. If the temperature falls afterwards, wait and observe the extent of the depression; if not, repeat the dose after the lapse of an hour; should this fail, gradually increase the amount to two or three grains. The first dose may be given when the temperature reaches above 103 degrees, and the drug may be repeated as often as necessary to keep it below this point, the cardiac condition being carefully watched in the meantime." In the abnormally high fever of scarlatina Dr. M. P. Hatfield (*ibid*) finds that Phenacetine sometimes gives much comfort. With regard to the action of this remedy in typhoid fever, Dr. C. W. Earle (*ibid*) remarks: "I can state with definiteness that from two to three grains of Phenacetine given to a child from eight to ten years of age with a temperature of 104 degrees will reduce it almost without a doubt to 100 or 100.5 degrees. I have tried this many times and can speak with confidence. This, in my judgment, is the best remedy at our disposal if we must administer a drug for the reduction of temperature." In the treatment of acute bronchitis, Dr. W. S. Christopher (*ibid*) states that "The modern-coal tar antipyretics

have a marked effect. They appear to act almost as specifics, diminishing the amount of secretion, lessening the severity and frequency of the cough, and relieving pain, without acting like opium in simply covering up symptoms. Of these the safest probably is Phenacetine. For an infant from six months to two years of age the following formula will be found useful: Phenacetine gr. 12 to 14, caffeine gr. 1 to 2. Div. in chart. No. 12. Sig. Give one every four hours. The smaller dose may be used at six months and the larger at two years. For younger infants the dose should be reduced, and for older children slightly increased." These citations from a standard text book serve to emphasize the valuable properties of this remedy in the various febrile affections of childhood.

Dr. C. F. Tucker of Syracuse, N. Y., January 9, 1896, writes: Some time ago when I was doing a country practice at Jordan, Onondaga Co., N. Y., I wrote to Messrs. Battle & Co. that I could not get the uniform results from Bromidia that I had previously. They sent me a 4 oz. sample and that was all right, and I still have on hand a little of that particular sample.

The party who had dispensed my prescriptions, after I had expressed my opinion very strong, confessed that *he had purchased a considerable quantity of a Mixture at a less price, said to contain exactly the same ingredients, and had been dispensing that when Bromidia was prescribed.*

After that I had no more trouble, and I can truthfully say that you can find it in my emergency case, office, and in my regular "grip" always, and I have never seen anything but perfect satisfaction attending its use, and I have given it to patients of all ages and about every condition.

I have used it in the last stages of pulmonary tuberculosis, and in severe cases of chronic bronchitis, in delirium tremens, etc., and I always use it when I want a certain hypnotic.

I have used it in doses from 2 minims up to 2 and 3 drachms. It is one of the mixtures of so-called treacherous chloral that has never, thus far, caused alarm. I have been familiar with Bromidia since away back in the 80's when I was a clerk in a drug store, and since I have been practicing I still regard it as a reliable old friend, and so it has proved on many occasions.

"Within the last month or two we have used the *Wine of American Ash*, from the well-known firm of Theodore Metcalf Co., quite extensively in menstrual irregularities, such as inflammation, leucorrhœa, etc., with very satisfactory results. The surgical craze in the treatment of diseases of the female pelvic organs has prevented, perhaps, many of our best physicians from studying as carefully as they should, the medical side of the question. Dr. Skene's recent work on 'Medical Gynecology' will, no doubt, do much to bring the pendulum back to a happy medium. Along with the *Wine of Ash*, especially in the poorly nourished patients, we have used with great benefit, *Burnett's Cod Liver Oil*, one of the best preparations on the market."—*The Denver Medical Times*, May, 1895.

Dr. W. F. Varcoe, New York, writes: "I cannot too highly recommend the use of BORINE as an antiseptic and local tonic for Catarrhal affections of any kind. I have employed it in cases of Diphtheria and found it most beneficial." In all Catarrhal affections BORINE has long been regarded as "par excellence," the ideal antiseptic, but more particular in that class of cases which (at first) are termed slight ailments and in which there is the greatest need of cleanliness and prophylaxis. BORINE being a *thorough germicide* and *prophylactic*, but *non-irritating* and *non-toxic*, can be used in cases of urethritis and cystitis at any stage of the disease. As a douche (tablespoonful to a pint of water) in leucorrhœa and vaginitis it is indeed a perfect prophylactic, and should be used in health as well as disease.

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Cardiac Neuroses and Its Electrical Treatment.*

BY WALTER F. ROBINSON, M. D.

The present time in America may fairly be called the nervous age, and as a result we see on all sides of us a large number of cases of functional or nervous trouble. The reasons for this are all too evident in the rush and struggle of modern life, and the tremendous competition in all branches of activity. Among this large class of cases an extremely common trouble is functional disturbance of the heart, or as it is also called cardiac neurosis.

The terms nervous and functional are very nearly synonymous in this connection, for the reason that all the functions and activities of the body are under the control of some part of the nervous system. The nervous mechanism of the heart and its connection with the other nerves of the body form an extremely complicated system.

There is first the cardiac ganglia scattered throughout the muscular substance of the heart itself. These are connected by nervous filaments with the endocardium and also with the network of filaments covering the outside of the heart, more particularly at its base. This network of nervous tissue is in its turn connected with the rest of the nervous system by three cords. One of these cords passes through the first dorsal and last cervical ganglion into the sympathetic nerve. It increases the rate of the cardiac pulsations and augments their force. It is sometimes called, therefore, the accelerator nerve of the heart. It is through this nerve that the cardiac metabolism is affected and its energy set free. The other two cords both enter the vagus nerve, but each has its separate origin and function.

The superior cardiac nerve is an afferent nerve and conveys from the heart a controlling influence to the vaso-motor center in the medulla that regulates the movements of the arterioles, so that when a heart is laboring against a blood pressure too high for its powers, an impulse from the heart to this center inhibits the constrictor influences and tempers down the blood pressure to suit the cardiac strength.

*Read before the Medical Society of the County of Albany Nov. 1895.

The third cord, known as the inferior cardiac nerve, is inhibitory in its action and reduces the rapidity of the heart beat.

By means of these three cords the heart is in close connection with all parts of the system and therefore readily affected by the numerous irritations to which the body is constantly exposed. Wyss* of Zurich reports an interesting case of a peasant in whom rapid heart beat or tachycardia was brought on by overexertion. Any attempt at work brought on an attack of palpitation, the pulse going as high as 270 beats per minute.

This is an example of cardiac neurosis brought on by mere physical exertion. Cases of this kind abound in medical literature. Young men who indulge in athletic exercises to excess are often affected in this way. It should be said, however, that severe overexertion may not only cause a cardiac neurosis, but grave organic disease may sometimes result from it.

The form of trouble caused by excessive physical exertion is known as "forced heart," or "overwrought heart." It is seen in those who attempt great feats of strength or endurance and is a frequent affection among soldiers. It has been fully described by Dr. Da Costa in a remarkable paper published in the American Journal of Medical Science, January, 1871. This will be referred to later under symptomatology.

Another frequent cause of cardiac neurosis is found in gastric and intestinal disturbances. A case is recorded of a man forty-two years old who had a pulse of 240 beats to the minute. After the expulsion of a tape-worm he recovered and the pulse returned to normal.

There is a popular belief among physicians that most all the mild cases of palpitation of the heart are due to digestive disturbances, more especially those of the stomach. This idea is due to the fact that the two diseases often go together.

It is self evident that this fact alone does not prove the theory, which in the writer's opinion is only partially true. While a certain number of cardiac neuroses are caused by stomach troubles, there are also cases of gastric disturbance which in their turn are due to the heart. Finally patients sometimes present disturbances in both these organs that are entirely independent of each other and are both produced by some underlying cause such as neurasthenia.

A third class of cases are those produced by the various toxic agents, such as alcohol, tobacco, tea and coffee. Such cases are familiar to every physician and as a rule they are easy to recognize. An important fact in this connection is that great differences exist in

* Deut. Med. Woch., 1887.

the susceptibility of different individuals to these agents, and the same amount of nicotine that causes well marked heart symptoms in one person will be perfectly innocuous in another.

Alcohol, though a powerful toxic agent, is not very important in this connection, according to the writer's experience. Alcohol taken in moderation by those who are accustomed to its use, has an action which is rather salutary than otherwise. Taken in excess, its action on the brain and other organs is so bad that the mere heart symptoms are often thrown into the background.

Tobacco, on the other hand, although a sedative so-called, when taken for a long time may become an absolute poison to the nerves, and has, moreover, a powerful depressing action upon the heart. It is therefore a most important factor in the causation of the disease in question.

When cases are seen in men the action of tobacco should be carefully considered, and if possible its use should be stopped. Many men will refuse to give up this pet indulgence, even though it is demonstrated to be the cause of their trouble. In such cases its use should be limited as much as possible. Many cases of cardiac affection from nicotine poisoning are so severe as to closely resemble angina pectoris. According to Balfour, these attacks sometimes prove fatal even in young men.

Tea and coffee, when taken in excess, may act as cardiac irritants, but they are not apt to cause cardiac affection when acting alone. If they have any share in causing this trouble it is generally in connection with other factors.

Still another class of cardiac neuroses are those in which the disturbance is caused by emotional impulses coming down from the brain. The centers which control the cardiac action are located in the medulla oblongata. They are directly connected by ascending and descending fibres with the cerebral cortex. It is in this way that emotional impulses of various kinds, such as anger, joy, grief, worry, etc., come down from the brain and often seriously interfere with the control of the heart. Heart failure and sudden death are occasionally the result of violent emotion, and strange to say, joyful emotion is more apt to cause death than grief or sorrow. This does not occur often enough to be of any great importance, except as it goes to prove the action of the emotions upon the heart in general.

Dr. Balfour says that the petty worries, anxieties and troubles of daily life keep up a continual though slight inhibition of the heart's action, and in the course of time form an important factor in the causation of cardiac disease. In another place he says: "A violent

emotion may fatally inhibit the heart's action; a less violent but more persistent inhibition lessens the ventricular output and ends by dilating the heart." Da Costa says. "The heart bounds with joy; it sinks at sights of horror."

Richardson says in this connection: "I believe that not a single external impression can be made on the senses that is not conveyed to the heart and registered upon it."

These quotations are made to show what an undoubted action the emotions have upon the heart. High authority such as that of Alonzo Clark, and Fræntzel of Berlin can be given for the belief that severe emotional shock, even if it does not cause immediate death, may so weaken the heart that it is unable to perform its functions, so that the patient sinks and finally dies, according to the popular saying, "of a broken heart."

Quotations of this kind could be multiplied from the writings of standard authors, but enough have been given to show the importance of this matter. Anyone wishing further proof of the statements made is referred to the list of works at the end of this article.

It is this last class of cardiac neuroses, that resulting from emotional causes, that is the most important for us to consider, since it is the largest and also because the cases are the most serious, frequently resulting as they do in organic disease. The reason of this is that their action is so constant and long continued, frequently extending over years.

A most important factor in the causation of these functional affections is the modern disease or condition known as neurasthenia. This is a condition in which the nervous or vital force of the system is very much reduced. It has two important symptoms: the nerves are extremely sensitive to external irritations of all kinds; and the reflex irritability of the system at large is greatly increased. The result of this is that the various disturbing influences act with much greater force in the case of neurasthenics and that cardiac neurosis is extremely frequent among them.

Chas. K. Mills says in this connection: "A true nervous dyspepsia associated with heart palpitations is often one of the most annoying evidences of nervous strain."

Dr. Beard of New York, whose work on neurasthenia is a classic, says: "The heart is quite apt to be very irregular and irritable in many of these cases. It beats perceptibly and painfully, not only under excitement, but upon even a thought of responsibility—of undertaking anything which requires exertion, even when sitting quite still. It is so powerfully affected by the mind, so intimately under

the influence of the emotions, that I have almost abandoned the habit of examining the pulses of my patients, on a first visit, for the reason that I learn almost nothing by such examinations."

These same phenomena are observed by every doctor who has occasion to see a considerable number of nervous patients. As has been already shown, the heart on account of its important nervous connections is an extremely sensitive organ. In neurasthenia and allied conditions we have increased general sensitiveness, and as a result patients in these conditions are specially liable to cardiac neurosis.

We have seen that the heart is very sensitive to outside influences and that there are many ways in which it can be disturbed and its regular action interfered with. We will now consider the symptoms by which this disturbance manifests itself.

First there is pain. Da Costa says it is an almost constant symptom in forced heart, and this is also true of other forms. It manifests itself in various ways, sometimes dull and heavy, sometimes sharp, shooting or burning in character. It is frequently confined to a small area in the region of the apex beat, but it may extend over a large part of the left side. It is very rare for the pain to shoot down the left arm. This is one of the symptoms of true angina pectoris, a disease which we are not considering, for the reason that it can hardly be called a neurosis, depending as it does upon organic change. Instead of pain, patients will sometimes complain of a sensation of weakness or gone-ness in the same region.

Palpitation is another important symptom which generally comes and goes in paroxysms. In "forced heart" it may last for many hours at a time, but in other forms at least it is not apt to remain very long. In cases where the cardiac affection is due to toxic agents, as alcohol or nicotine, these attacks of palpitation are very apt to come on at night and they often wake the patient up out of a sound sleep.

This is a terrible sensation accompanied as it is with a choking feeling and a sense of impending dissolution. Sometimes the heart after beating violently for a few minutes will stop; and then it seems to the patient an eternity before it starts again. The fear of death is so great in these attacks that patients will sit up or walk the floor the whole night through for fear of their recurrence.

Palpitation is often accompanied with dizziness and faintness which may even extend to momentary unconsciousness. Patients will sometimes be taken with an attack of this kind in the street and will be obliged to sit down upon the curb or upon a doorstep until it passes over. Oppressed breathing and a sense of suffocation are also frequent

symptoms. The pulse is almost always rapid, between 80 and 100 beats to the minute. During a paroxysm it will perhaps beat very hard and strong, or on the other hand, there may be fluttering of the heart in which the pulse becomes intensely rapid and feeble. This may be followed by an intermission in which the heart stops for one beat and then resumes again more slowly.

TREATMENT.

Since functional disturbance of the heart is of frequent occurrence, and as it is liable to run into or at least predispose to organic disease of this organ, its treatment becomes a matter of considerable importance. The principles which should be a guide in the treatment of this disease are as follows:

First, the same general law which is true of the treatment of all diseases should be followed here. Make an earnest effort to find out the cause or causes of the trouble, and when found remove them as far as possible. It must not be assumed, however, that this alone will always cure the trouble.

A case of heart disturbance may seem to depend upon stomach derangement, but after the latter trouble has entirely disappeared the cardiac trouble may still persist. An excessive smoker may present all the symptoms of tobacco heart, and yet that organ may continue to act badly even after the use of tobacco has been entirely discontinued. The reason for this is twofold.

First, the assumption that some other organ is disturbing the heart's action secondarily may be wrong, and the two affections may be entirely independent of each other. In such cases they are probably both symptoms of some general condition of the system.

Another reason for the failure to cure is this: that if a nervous mechanism be put out of running order by any cause which acts upon it for a considerable length of time, it is apt to remain so after this cause has ceased to act. It seems to have formed the habit of working badly and keeps on doing so, just as before it had the habit of working well. As far as possible remove the cause or causes of the trouble. If the symptoms disappear well and good; if they do not, then treatment of some other kind must be applied.

It may be laid down as a general principle in the domain of the nervous system that when the force is weak the function of the part will be poorly performed and a slight cause will throw it out of order. This is specially true of the heart mechanism which, as we know, is extremely delicate and complicated.

A certain number of cases of functional heart trouble are met with in which the only discoverable cause seems to be the general lack of nervous force in the system. These cases can often be cured very satisfactorily by a course of static electricity. Since patients of this class are apt to be very sensitive, the treatment must be commenced with great caution, and any increase in strength must be made very gradually.

It is well to begin the treatment with the so-called static charge, in which the patient is placed upon the insulated platform and the current allowed to flow through the body. This treatment causes no irritation and can be borne with ease by the most sensitive person.

At the second treatment the action may be strengthened by applying the static breeze along the spine or to the region of the heart. This is done by means of an insulated metallic point which is connected with one pole of the battery by a chain. The current flows very readily from the point and concentrates its action upon the spot toward which the electrode is directed.

This method of application is very soothing and extremely efficacious in the removal of the local pains which are generally present in the precordial region even if it does nothing more. Mild cases of cardiac neurosis depending upon a weakened or neurasthenic condition of the system will often yield very readily to this form of treatment.

Three or four treatments will sometimes cause the cardiac trouble to disappear entirely, while the patients feel better and stronger in every way. These cures are generally permanent unless the patient undergoes some great strain which exhausts the nervous force again. It is hardly necessary to say that such cases are of the mildest possible kind. It should also be said, however, that they are often as annoying to the patient as a much graver affection, and if left to themselves and not relieved they may eventually grow worse and become grave themselves.

Finally, it may be said that these cases, mild as they are, sometimes show themselves very obstinate to remedies, and they will often resist medicines for a long time before their cure is attempted by means of electricity.

Static electricity acts so well in many of these cases that it is good judgment to begin always with this form of treatment. Many cases will yield to this method as already stated, but some will require more specialized treatment and then recourse must be had to galvanism.

The general law has already been stated that weakened nerves are sensitive, irritable and easily thrown out of order in various ways. Suppose, therefore, that a case of cardiac neurosis has resisted the

application of static electricity or franklinism, and it is desired to treat it more directly. If it can not be traced to some specific cause as indigestion or something of the kind, and if organic disease can be excluded, then it is probably a case of this kind. That is to say, the nervous centers which control the cardiac action being unduly sensitive, they are disturbed by slight impulses of various kinds coming down from the brain to the medulla, or up from the thoracic, abdominal or pelvic viscera. In such cases it is often impossible to find any specific cause for the cardiac disturbance in the ordinary acceptation of the term.

Accepting the theory just advanced as true, it follows that if these weakened centers can be toned up and restored to their normal condition they will no longer be disturbed by the slight irritating influences which are constantly assailing us, and the trouble will therefore cease.

Electricity is a powerful nerve tonic, and it is to its action that we look to tone up these weakened centers. The best method of accomplishing this is to pass a galvanic current directly through them.

As we have already seen, the nervous mechanism of the heart consists of numerous parts, some of which lie in the heart substance itself, and some in the medulla, the two being connected by three nervous cords. As it is difficult to tell just how these different parts are affected and whether one or all are at fault, the current is passed through the whole system. In order to do this the positive electrode is placed upon the region corresponding to the medulla, the negative, over the cardiac apex, and the current passed from one to the other. It should be noted here that the current as it enters the body at the upper electrode passes through the lower part of the brain, which in many patients is excessively sensitive, so much so that the ordinary tonic dose of galvanism would be entirely too strong for the brain to bear. In such a case the effects of the current upon the brain must alone be considered. This will probably bring the dose down to 2 or 3 ma., but this question of dose will be referred to later on.

It is generally desirable to treat the other parts of this system with a stronger current, and the electrode over the medulla is therefore replaced by one applied over the upper dorsal vertebræ. These electrodes are best made of flexible copper wire, which can be bent into any desired form, so as to fit the various inequalities of the surface to which they are applied. This is especially true of the upper electrode, which should be applied just where the neck and back join. It is important that an electrode should fit the surface of the skin evenly in all parts. If it does not then the current will be concentrated upon

the point of greatest pressure and a very unpleasant burn may be produced. This, of course, it is specially desirable to avoid for many reasons. Take plenty of time, therefore, and be sure that the electrodes fit well and evenly and that all the metal parts are carefully protected with cotton so that they do not touch the skin. If they do burning may also be produced.

If the patient has been found to be somewhat sensitive and with an inclination to headache, it is well to begin with the electrode at the base of the neck instead of on the occiput. The first galvanic treatment must be given very cautiously, as many patients are extremely sensitive to it. The electrodes at neck and cardiac region are placed in position with the current at zero, and it is gradually increased, cell by cell, until 5 ma. are passing. It should be held at this point for about 3 minutes, and then just as gradually reduced, so that the whole treatment occupies 5 minutes.

This dose may be gradually increased 1 ma. at a time, until the dose of 10 ma. is reached. Although the higher centers in the medulla are not reached directly by the current, they are brought within its influence to a certain extent. As soon as a current traverses the skin and gets into the internal tissues of the body, which are good conductors, it diffuses itself in all directions and thus affects the organs lying in the neighborhood of the passing current. In this way the centers in the medulla receive the current indirectly and become to a certain extent habituated to it. After two or three treatments these centers may be treated directly.

After the treatment just described has been given the electrode at the nape of the neck should be removed and the occipital electrode applied. It is sometimes difficult to make this electrode fit properly, as gravity is of no assistance, and there is no clothing on this part of the body to help hold it in place. The method adopted by the writer is a very simple one and works extremely well.

The chair in which the patient sits has a head rest which can be adjusted so as to support the occiput. The electrode, made of flexible copper wire, fits over the head rest, and when the patient's head presses down it yields so as to adapt itself perfectly to the surface of the skin. Equal pressure is thus secured at all points. The current is now reduced to 2 ma. and allowed to flow for 2 minutes more. It may be increased 1 ma. at each successive treatment, just as is done in the first part of the application. The negative electrode over the heart is left undisturbed during the whole treatment.

It may seem to some readers that undue caution is required in carrying out this method, and that time would be gained by beginning

with a larger dose and increasing it more rapidly. This is the opinion of a certain number of men who use electricity, and the writer of this article has given the plan of using large doses a fair trial. After a somewhat extended experience he has come to use the method and doses here recommended.

Powerful doses of electricity are undoubtedly of value in certain cases and perhaps will cure those cases where smaller doses fail. This fact can only be ascertained, however, by using the smaller doses first, and then if they fail to have the desired action, going on to the larger. He who attacks every case at first with a large dose of electricity will meet with disaster, and that, too, before very long. As a rule it is best to treat these cases every other day, or three times a week. Patients in whom the attacks render their lives a burden to them and where the treatment gives them relief, will often ask for it every day. In such cases it is well to grant their request for a few days until the acute symptoms are somewhat relieved, and then reduce the treatment to every other day.

As to the length of time required to effect a cure in these cases, it depends upon so many different circumstances and is so extremely variable that it is almost impossible to give a definite answer. Some mild cases are completely dissipated in three or four treatments. Others will resist prolonged treatment of every kind and never be permanently cured. In such cases there is always a strong suspicion, sometimes amounting to a certainty, that there is some organic lesion to account for the difficulty.

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Gangrene Following Measles with a Report of Two Cases.

BY G. EMORY LOCHNER, M. D.

When an epidemic of measles spreads over a city as generally as it has over this city during the past few months, and when it invades the asylums where the city's orphans are huddled together, deprived of sufficient sunlight and fresh air, and many of them the offspring of tubercular, syphilitic and generally depraved parents, then it is we see this disease in all its virulence and with its rarest complications and sequelæ.

During August this disease spread among the inmates of the St. Francis de Sales asylum and there were developed two cases of noma, or gangrene of the mouth and vulva. The first case, which was attended by Dr. Macfarlane, was as follows:

Mary C., aged three years, illegitimate child, came to the asylum when two years old. Was always delicate and puny, with a suspected tubercular diathesis. On August — she was taken with a slight attack of measles with marked eruption, but no severe general symptoms. Her mouth became sore about September 1st and two weeks later became gangrenous. She died September 21st.

Case II. On October 6th I was called to see Mary M., aged two years and four months, whom I had attended the preceding winter for broncho-pneumonia. Her history was as follows: Father a periodical drinker, mother of delicate constitution and at present writing has phthisis pulmonalis. Entered the asylum in August, 1895; was taken ill with measles about September 1st, complicated later by broncho-pneumonia; as several of the inmates had died of this disease her friends moved her home and she came under my care. I found her in an exceedingly weak and emaciated condition; pulse 150, respiration 45 to 50; temperature $102\frac{1}{2}$, chest filled with râles. She was stupid and disinclined to take nourishment. A portion of the scalp about the size of a ten-cent piece was missing, it evidently having sloughed out, probably the result of a gangrenous process. Strongly stimulating treatment was ordered and concentrated nourishment. The next day her condition was weaker and she had taken but very little nourishment. On entering the room, I noticed a very offensive odor and upon inquiry, the nurse informed me that she had noticed a dark spot on her vulva the preceding afternoon, which was very offensive. Upon examination, I found the right side of the vulva swollen and covered with a

dark gangrenous spot, the size of a half dollar, involving the right labia majora and minora, the clitoris and the vagina in the region of the meatus urinaris. Death occurred about noon the following day, about 72 hours after leaving the asylum.

Prof. Tillmanns, of the University of Liepzig, in writing of gangrene, says: "The causes of tissues death are as follows: 1. Interruption of the afferent flow of arterial blood, without the development of a collateral circulation, such as may occur in the case of thrombosis and embolism, or after ligation, or in consequence of the pressure of a tumor or inflammatory exudate. 2. Interruption of the efferent flow of venous blood. 3. Interruption or stasis of the circulation in the capillaries, as a result of pressure, coagulation of the contents or disease of the capillary walls. 4. Death of the tissue-cells, without any disturbance of circulation, due to poisons, such as a snake-bite, or to micro-organisms and the products of their metabolism, such as are found in infectious diseases of wounds—for example, erysipelas, cellulitis, etc. The various causes of gangrene are frequently more or less combined, for example, abnormally high or low temperature causes both the cells and the vessels to lose their integrity in consequence of the coagulation of the albumen. The different tissues possess different powers of resistance against the above-mentioned causes of gangrene.

"Local and general anæmia, venous stasis disturbances of circulation from diseases of the vessels, heart or lungs, or disturbances of circulation due to inflammation—in short, faulty circulation from any cause increases the disposition to gangrene from the effects of mechanical, chemical and thermal influences. Portions of the body where skin presses against skin, as in the scrotum or labia, have but little power of resistance in individuals with circulatory disturbances.

"In still other instances a weak constitution, i. e., a condition in which the cells possess slight powers of resistance, favors the occurrence of gangrene. This is the reason why the gangrene which spreads so rapidly on the face, the so-called cancrum oris or noma, is particularly likely to develop in individuals who are very much reduced and in children."

Gangrene, then, is a term employed to denote death of a part of the body in mass. It results either from a cessation of the arterial blood-supply, or from an obstruction to the venous out-flow, or purely from a stasis of blood in the capillary vessels. It may also take place independently of any disturbance of the circulation by the direct action of destructive agents upon the cells of the tissues.

Surrounding the destroyed tissue is an infiltrated zone, a true necrobitic process, all evidence of cellular tissue being destroyed, only

a homogenous substance remaining, in which are micrococci left. Around this increased connective tissue, the connective-tissue corpuscles in active cell division, while the blood-vessels are closed by thrombi and lower forms of life. Outside this we find healthy tissue. In every case of noma, these four zones can be distinguished.

Noma of the cheek, then, is the result of a gangrenous stomatitis, and is of bacterial origin, producing a capillary thrombosis.

J. Lewis Smith says, gangrene of the mouth occurs usually between two and six years of age. Among the diseases which have been known to terminate in, or be followed by gangrene of the mouth, are the pulmonary and intestinal inflammations, whooping-cough and the fevers, both the eruptive and the non-eruptive. Rilliet and Barthez have published a table of ninety-eight cases in which gangrene resulted from various diseases and in forty-nine of these measles was the antecedent disease. In forty-one out of forty-six cases reported by Bonley and Caillault measles was the preceding disease. All observers agree that the majority of these cases are the result of measles. Simple or ulcerous stomatitis often precedes gangrene and this is one reason why so many cases of gangrene occur as a sequel of measles.

In 1881 an epidemic of measles occurred in the New York Foundling asylum in which 165 children were affected; of these seven developed gangrene of the mouth; in one girl it appeared upon the upper jaw at the base of the teeth; in two girls it appeared upon the inside of the cheek and upon the vulva and not upon the gums. In a boy it attacked the lower jaw, destroying four teeth, with their sockets, and the upper jaw, destroying five teeth with the corresponding portion of the maxillary bone, so that all the incisors and one canine were lost, as well as the cartilaginous portion of the nasal septum. Gangrene also occurred in the groin in this case. Another boy lost two incisors from gangrene of the jaw. These cases were treated by the application of muriatic acid to the gangrenous portion. All lived except the first, who had broncho-pneumonia. The remaining two died of diphtheria and pneumonia before treatment could be tested. One had gangrene of the lower jaw and the other of the soft palate.

Gangrene or noma of the vulva begins with reddening and infiltration of the labia, accompanied by a discharge of ichorous serum, followed by vesication and the formation of a greyish green slough and rapid gangrene. It has been likened to noma in the mouth. It is a rare disease, produced by infection, has been known to be infectious and exceedingly fatal. It occurs in persons whose resisting power has been undermined by exhausting illness or constitutional cachexia.

It has most frequently occurred in badly nourished children as a

sequel of the eruptive fevers. Gangrene of the mouth and vulva are regarded rather as sequelæ than complications of measles. After a severe epidemic of measles in the New York Foundling asylum in 1874, three cases of gangrene vulvitis occurred in those who had been affected. These cases were treated by flaxseed poultice and dusting iodoform over the surface each day, with a satisfactory result.

The treatment of these two forms of noma, consists in sustaining the patient by stimulants and strong foods, while the gangrenous portion should be destroyed and the sloughing process hastened by the actual cautery, knife or strong escharotics and the parts kept covered with antiseptics, and all necrotic tissue removed by frequent antiseptic bathing of the parts involved. The mortality of cancrum oris is about seventy-five per cent. The absence of chest-symptoms or diarrhœa makes the prognosis more favorable. Different investigators have attempted to find a micro-organism which could be the causative factor in this disease, but as far as I am able to learn it has not yet been isolated, with perhaps the thread-like bacillus of Mr. Alfred Lingard. The exact relation between the mouth and vagina as regards the location of this disease and why the female should be more subject to it than the male, or the vulva than the penis, are still subjects for discussion.

Twenty-third Annual Meeting.

The Association of the Alumni of the Albany Medical College will hold its twenty-third annual reunion on Tuesday, the 14th of April. The order of exercises for the day will be as follows:

- 9.00 A. M.—Reception in library. Coffee and sandwiches will be served.
- 10.30 A. M.—Annual meeting in Alumni Hall.

PROGRAM.

1. Faculty address of welcome, Prof. S. B. Ward, M. D.
2. Minutes.
3. Reports.
4. President's address, Dr. Theobald Smith ('83).
5. Report of historian, and class historians of '56, '66 and '86.
6. Election.
7. Miscellaneous business.
8. Reading of letters, etc.
9. Impromptu speeches.
- 3.00 P. M.—Commencement exercises at Harmanus Bleecker Hall. Address by Rev. W. W. Battershall, D. D., Albany.
- 8.00 P. M.—Alumni dinner at the "Kenmore."

Graduates of the college are urged to attend this reunion and are assured that the committees in charge will do everything in their power to make the occasion a pleasant and profitable one to those who attend. They are requested to notify the corresponding secretary, Dr. J. B. Stonehouse, 5 High street, Albany, of their intention to be present, or, if unable to do so, to send some word of greeting which may be read at the meeting, and to accompany this with a photograph for the alumni collection, if they have not already done so. No pains will be spared to make the dinner enjoyable. It will be served in the handsome dining room of the "Kenmore" and will be a first-class course dinner enlivened by songs and good after dinner speeches. Tickets for this dinner may be procured in advance, or on alumni day, or at the hotel in the evening, at one dollar and a half each by alumni, which is but about half the actual cost of the dinner. In order that places may be provided for all who attend, it is greatly desired that those who can do so, notify the corresponding secretary of their intention to be present.

Craig Colony for Epileptics.

Answers to Correspondents.

THE OBJECT OF AN EPILEPTIC COLONY.

The object of a colony for epileptics is to provide for the four great needs of these unfortunates:

First—To give them schools where they may be educated as other children and young people are.

Second—To afford them industrial training in any sort of occupation they may desire to follow.

Third—To provide those epileptics a home to whom all other doors are closed.

Fourth—To treat every case of epilepsy according to the best known scientific methods.

NEED FOR PROVISION OF THIS KIND.

Epilepsy is a peculiar disease, characterized by loss of consciousness and a convulsion. The fit or epileptic seizure occurs from time to time, and may last from a few seconds to a few minutes, sometimes longer. Some patients have fits every day or oftener, some once a week, some once a month, some only once or twice a year. It is only during the fits that they are incapacitated. At other times they are well

and strong, and healthy looking, and quite as able to work and study as are other people. But the fact that they have these fits, no matter how rarely, debars them from many of the privileges enjoyed by their more fortunate brethren. They will not on that account be received into the public schools, and can receive no education. They cannot attend church or social gatherings. They are shunned by their playmates, and they become burdensome to their families. When they grow to adult life no one wishes to employ them, so, although they are able to learn a trade or profession, the shops and colleges are closed against them. No general hospital receives them as patients, and, in fact, there is no place at all which is open to them except an almshouse or an insane asylum, and as the insane asylum is better than the almshouse, many patients are sent there in preference to a poorhouse.

There are 120,000 epileptics in the United States. There are some 12,000 in the state of New York, of whom more than 1,000 are in almshouses and asylums on public charge.

THE SITUATION OF CRAIG COLONY.

Craig Colony, named for the late Oscar Craig of Rochester, formerly president of the State Board of Charities, consists of nearly 1,900 acres of land in the Genesee valley. It is reached by two trunk lines of railways (the Erie, and the Delaware and Lackawanna) and from roads centering at Rochester by the Western New York and Pennsylvania railroad. The colony has its own post-office and railway station known as Sonyea, an Indian word signifying sunny place. The land is extremely fertile and beautifully diversified with fields, woodlands, meadows and glens. The farms, gardens, and orchards are already in a high state of cultivation, and will yield this year an income of \$12,000 to \$15,000.

THE PLAN OF THE COLONY.

The law establishing the colony required that it should be arranged on the village plan. To this end the services of Frederick Law Olmstead, the landscape architect, were secured by the Board of Managers, and he has prepared the scheme of an industrial and agricultural village upon the best principles. There are already many buildings upon the grounds (some thirty or forty) which are to be immediately utilized. Craig colony will not resemble an institution in any particular, but will look more like a country town than anything else. As the patients are received, they will be set to work or at study in various ways. They will take care of the farms, gardens, and orchards; they will plan and build new houses. There will be among

them tailors, shoemakers, printers, bookbinders, masons, ironworkers, carpenters, painters, and so on. In fact, every sort of employment, every sort of recreation, everything, in short, that goes to make up the life of a country village, will be found in this colony, the only difference being that the citizens of this community will be epileptics.

THE ECONOMY OF THE SCHEME.

The resources of the land are such that almost everything in the way of food for the inhabitants of this unique village can be raised by themselves, and their surplus agricultural and manufacturing products judiciously managed can make the colony practically self-supporting. Thus the 1,000 patients already upon public support in this state are to be no longer a burden to the taxpayers.

OPENING OF THE COLONY.

Work has been progressing very rapidly during the year to prepare existing buildings for the reception of patients. The first quota of patients, numbering sixty, will be taken from the almshouses early in November. We propose to receive 200 during the winter and perhaps more. Estimating the capacity of the present buildings at 300, we shall need additional buildings during the coming year to accommodate 300 more patients, before the 600 now in the almshouses can be cared for.

STATE PATIENTS.

The patients taken from the almshouses and asylums will be known as state patients, and they will be provided for before any private patients can be received. They will be sent to the colony by the poor authorities of each county according to a form required by law, the blanks for which will be furnished on application to the State Board of Charities or the superintendent of the colony.

PRIVATE PATIENTS.

As soon as all epileptics now upon public charge eligible for admission to the colony are provided for, private patients will be received at prices to be regulated by the Board of Managers, according to the kind and extent of care and attention required. Such patients may, if it be desired, erect cottages for their own use upon the grounds, upon application to the Board of Managers.

RESTRICTIONS AS TO THE KIND OF CASES RECEIVED.

There will be no restriction as to the age of patients admitted, and the only restriction practically applies to the mental condition. Insane epileptics, or epileptics subject to insane outbreaks, cannot be taken into the colony.

DONATIONS TO THE COLONY.

The law permits the Board of Managers to take and hold in trust for the state any grant of land, gift or bequest of money, or any donation to be applied, principal or income, or both, to the maintenance and education of epileptics and the general uses of the colony. Charitably disposed people have here an opportunity for the beneficent use of money, and it is hoped that memorial buildings in the way of chapel, library, museum, gymnasium, school, shop, or cottage houses, bearing the donors' names, may in time be erected.

OFFICERS OF CRAIG COLONY.

The State Board of Charities has jurisdiction over this colony. The Board of Managers consists of Dr. Frederick Peterson, president, 60 West Fiftieth street, New York; Mrs. Charles F. Wadsworth, Geneseo, N. Y.; H. E. Brown, Mount Morris, N. Y., secretary; W. H. Cuddeback, Buffalo, N. Y.; Charles E. Jones, M. D., Albany, N. Y.; L. S. Oatman, Buffalo, N. Y.; Judge O. P. Hurd, Watkins, N. Y.; Jeanette B. Hawkins, Malone, N. Y., and H. A. Phillips, Lowville, N. Y. The medical superintendent is Dr. William P. Spratling, Craig Colony, Sonyea, N. Y.

The Business Side of Medical Practice.—The points culled from various sources are worth repeating. "Dr. W. R. Allison, in the Medical Review, says: 'There are two things which I have never seen succeed in medicine: (1) To speak ill of your confrere; (2) to buy your patients by charging a small fee. A man who makes calls for seventy-five cents is a man of limited ability or from a college of inferior character. The dispensary scourge—that so-called benevolent fad which has wrought irreparable damage—does not contain the true essence of benevolence, but originates in the fertile brain of a keen desire for increase of practice (through the dispensary). The poor entreat us to be cheap in our charges and make the rich pay large fees. No other business is conducted upon such principles, unless it is to make medical men pay more for the same goods than is paid by the general trade. There should be an effort to formulate a fee table in our society—not a fixed and definite charge, but a minimum rate for which a less charge, unless excused by poverty, would cause a payment sufficient to prevent its repetition.' Gaillard's Medical Journal says: 'Lack of appreciation of the value of one's own work is another cause of small collections. The man who underestimates his own services cannot expect others to place a high value upon them. One of the chief violations of sound business principles is laxness in keep-

ing accounts and rendering bills.' From the Woman's Medical Journal: 'We pay our lawyer without dispute. We pay, half the time on a sort of compulsion or shame, the minister's salary, and feel as if it was a sort of Peter's pence, and gave us admission to the gates beyond. We often make the minister presents, and often in our wills leave him a sum of money. We pay our tradespeople, but when it comes to paying the doctor we think twice. We did not think twice when we called him; we wanted him; we had him.'—*World*.

The Medical Library of Paris.—The French medical student of the present time is easily roused to wrath when suffering from a real or imaginary injustice, but in some matters he is a long-suffering creature. The bad management of the library of the medical faculty is quoted as a proof of his meekness and endurance. During the year which is now passing away 151,180 students have consulted 270,000 volumes in the said library, these statistics giving a flattering idea of the library which is not supported by fact. The library is so overweighed by debt that not only new books are not bought but sixty subscriptions to publications have been discontinued. Five thousand volumes and pamphlets have been bequeathed to the library by deceased medical men. Among these thousands of volumes there were one hundred new works. Books that the library does not possess are constantly and repeatedly asked for. The medical press, with justice, considers this state of things to be hard on the medical students, who pay something toward the expenses of the library. The position of the library is a difficult one. The allowance for the new spacious library and reading room is the same as that granted to the old one, which was much smaller and therefore comparatively inexpensive. The staff is larger and binding is a costly item, and for want of funds books remain ragged. More books than ever on medical and scientific subjects are produced, and yet fewer are bought by the medical faculty library.—*Medical Record*.

The Effect of the "X" Rays Upon Micro-Organisms.—The assertion that the "X" rays may have some therapeutic value, and may perhaps modify the course of disease when passed through the body, has been made by a number of persons, and it is a claim which may easily be misused by the charlatan. Dr. T. G. Lyon of London recently made some experiments on the influence of these rays in cultivations of diphtheria bacilli. They were exposed in the incubators for twelve hours to the "X" rays. The bacilli continued to grow and were not in the least modified by the conditions to which they were subjected.—*Medical Record*.

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HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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ANNOTATIONS.

Not Bound to Cure.—A physician was called as a specialist to treat the eyes and ears of a boy who sustained serious injury by the explosion of a dynamite cartridge. An action was brought against the father to recover compensation, the physician testifying as to the value of his services, the circumstances under which they were rendered, and the nature of his treatment. The account consisted of a large number of items for visits, etc. The defendant's counsel proposed to cross-examine the plaintiff as to the amount charged for particular visits, and what they were worth. On objection, the trial judge ruled that he might be examined as to what had been done by him, but as to how much he had charged for each visit was immaterial; that if the defendant proposed to make the defense that if the services were worth anything, he could make it, and the jury would pass upon it. There was no dispute as to the number of visits or items, and the Supreme Court of Wisconsin says, *Wurdeman vs. Barnes*, decided January 28, 1896, it sees no reason for thinking that the defendant was prejudiced by the ruling, and that he lost nothing except the privilege of making a lengthy and useless cross-examination as to each visit by way of contrasting the value of one or more visits with the others. The defense was also made in this case, that the boy grew worse under plaintiff's treatment and then he grew better after the plaintiff was discharged. But this, the court holds, does not show that the plaintiff was guilty of negligence or unskillfulness in treating him. In particular, it was contended that the plaintiff improperly applied and used a tube of hot water over the nose to cure the ailment or injury to the eyes; that the heat was so great as to be injurious. Other physicians were in attendance on the patient, but their evidence was not produced. No surgical or medical witness was called by the

defendant to say that the treatment was improper or negligent in the least degree, whatever uneducated persons or non-experts might conjecture upon the subject. The plaintiff could not be convicted of malpractice, the court says, on such evidence. He could not be held responsible simply because he failed to cure the defendant's son, nor for mere misjudgment in treating him, if the treatment was such as physicians and surgeons of ordinary knowledge and skill would apply. The general rule of law, continues the court, is that a physician or surgeon who holds himself out as such, in treating a patient, must exercise such reasonable care and skill in that behalf as is usually exercised by physicians or surgeons in good standing, of the system or school of practice, in the vicinity or locality of his practice, having due regard to the advanced state of medical or surgical science. There being an entire absence of competent evidence to go to the jury under the counter-claim to sustain a verdict finding the plaintiff guilty of negligence or want of proper skill in treating the defendant's son, the court holds, in conclusion, it could not be left to the jury to find a verdict upon mere conjecture, and that the trial judge properly directed a verdict for the plaintiff.—*Journal of the American Medical Association*.

Consumption of Horse Meat in New York.—Although there are several factories in the vicinity of New York devoted to the preparation of horse meat for food, it is comfortable to be reassured by the chemist of the board of health that not an ounce of it is sold in this city unless it be in the shape of imported sausage. It is also stated by these authorities that the flesh of the horse is easily detected by the usual iodine test for starch, which it contains in contradistinction from all other butchers' meat.—*The Medical News*.

Large Bequest to a Philadelphia Hospital.—The will of the late Mrs. Anna R. Aspinwall of Pittsburg, Pa., who died in Edinburgh, Scotland, last December, leaves her entire estate, estimated to be worth from \$1,000,000 to \$3,000,000, to the hospital of the Protestant Episcopal church, Philadelphia. This hospital is maintained for the benefit of white female sick or convalescent orphan children. The will stipulates that there shall be no denominational discrimination, and asks that preference be given to those who have lost both parents. A contest of the will is threatened, but the presumption in favor of its validity is said to be very strong.—*Journal of the American Medical Association*.

Formalin in Disinfecting Catgut.—This journal recently noted the advantages of formalin in preserving microscopic specimens, as it hardens and strengthens the tissues. Hlavacek now announces that

it is exceptionally valuable in sterilizing catgut. It does not kill the bacteria; they emerge unharmed after soaking hours in it and being exposed in the vapor. But it hardens the catgut so that it will stand boiling. This result is accomplished by soaking it twelve hours in a 5 per cent solution. The catgut then can be boiled twenty minutes without injury. If then it is kept in a 1 per cent solution of sublimate, it is always ready for use, strong and solid and absolutely sterile.—*Wiener Klin Rundschau*, February 8.

The Treatment of Sciatica by Compression.—In an abstract of an article from the *Bulletin Medical de Paris*, which is published in the *Lyon Medical*, the writer states that M. Negro has reported one hundred and thirteen cases of rebellious sciatica in which this new treatment has resulted in recovery. The procedure is as follows: The patient lies on his face with his legs extended and resting easily one against the other. The most painful spot is selected, the region where the nerve proceeds from the sciatic opening. On its trunk both thumbs are applied and it is compressed with the greatest possible force; at the same time slight lateral movements are made without changing the point of pressure or moderating its intensity. This takes from fifteen to twenty seconds, and is followed by an interval of twenty minutes' rest, when the procedure is repeated. After a second application, which is much less painful than the first, the patient is able to walk, and for several hours, or even a day, he may be free from pain.

In order to obtain complete recovery, says the author, this procedure should be practiced about six times a day every two days, until the definite suppression of the neuralgia is obtained.—*New York Medical Journal*.

Method of Preparing Bone Marrow for the Treatment of Pernicious Anemia.—Dr. Alfred Barra of Leeds, England, offers in the *British Medical Journal* the following suggestions as to the preparation of bone marrow: "Three ounces of fresh bone marrow (as much red as possible) are made into a paste with port wine, one ounce; gelatin, five drachms. A little care is required in making the paste, to keep the gelatin and the marrow sufficiently fluid for them to be thoroughly mixed. The gelatin should be soaked in sufficient water to soften it, and then should be melted with the glycerin, the mixture being kept in a mortar previously made hot with boiling water, while in another mortar, made hot in a similar manner, the marrow and wine are mixed. Then the contents of the two mortars should be thoroughly incorporated and allowed to set." The hospital meat purveyor seems to have no difficulty in supplying the marrow free from spicules of

bone. To some patients the mixture of glycerin, or the mixture of glycerin and marrow fat, is distasteful. For some of these the objectionable taste is to be overcome by the addition of a small quantity of water at the time of the exhibition of the remedy.—*The Journal of the American Medical Association*.

The Multiplication of Medical Journals Published in Paris is astounding. The *Progres Medical* says that in 1894 there were 177; at the close of 1895 there were 199, and four new ones are already announced for 1896.—*New York Medical Journal*.

Surgeon-General George M. Sternberg has opposed a bill introduced into the United States Senate having for its ostensible object the prevention of cruelty to animals, but in reality, aimed at the prevention of vivisection. Dr. Sternberg says: "So far as observation goes, I do not think there is any necessity for legislation upon this subject. In my opinion, it is a mistake to suppose that those engaged in scientific investigation or in teaching physiology are any less humane than the members of the Washington Humane Society, and the passage of an act to place them under the supervision of inspectors, appointed by this society, would be an unmerited reflection upon them."—*Medical Record*.

The Queen of Portugal as a Medical Student.—The queen of Portugal has just terminated her second year's study of medicine and has passed her examinations before the faculty of medicine at Lisbon. Queen Amelia does not intend to practice; she means simply to affirm the right of women to intellectual studies.—*The Medical and Surgical Reporter*.

The Koumiss of the Caucasus.—The Caucasians designate under the name of "Kephyr" an acidulous beverage slightly alcoholic, prepared by the action of a special ferment, known as "Grains of Kephyr" on milk. These grains are small yellowish-white masses, compact, elastic; when fresh they have a cartilaginous consistence; when dry they become hard, more friable, of a dirty yellow color, translucent (somewhat resembling tapioca or sago). They vary in size from a nut to a pinhead, and their surface is irregular and bosselated. Placed in water, they swell somewhat, become softer and of a whitish color.

The zooglea encloses two species of bacteria and a yeast, the latter probably identical with the yeast of beer (the *Saccharomyces cerevisiæ*). One of these bacteria is in short immobile rods—the lactic ferment of Pasteur (*Bacillus lacticus*); the other consists of long bacilli, slowly motile, often showing slight enlargements at their extremities—this, the *Bacillus caucasicus*, is special. The part played

by these different bodies is for each most distinct. The bacillus lacticus secretes a rennet which coagulates the casein of the milk, a process necessary to its ulterior transformation; it also furnishes a special diastase, which changes the lactose into maltose by a process of hydration, thus fitting it to undergo the alcoholic fermentation through the action of the yeast. The bacillus caucasicus, through the medium of a casease which it secretes, dissolves the precipitated casein, transforming it into an albuminose.

The milk, at first opaque and holding in suspension flocculi of the precipitated casein, is now transformed into a transparent liquid, rich in peptones, slightly acid, and containing considerable carbonic dioxide and some alcohol, these last being produced by the yeast on the saccharine matter of the milk.—*Translated from the French of E. Mace by T. B. Rogers, Veterinarian.*

Iron Stairways on Outside of Hospitals.—Taking effect October 1, 1895, it is required by law in New York state that all hospital buildings used for general hospital purposes, or hospitals or asylums for the insane, or any hospital buildings which are more than two stories high, other than those which are fireproof in their construction, shall have properly constructed stairways on the outside thereof, with suitable doorways leading thereto from each story above the first, for use in case of fire.—*Journal of the American Medical Association.*

Technical Terms in Electricity, their Simplicity and Practical Importance.—We are confronted by the manifestations of electricity on every hand nowadays, and the modern physician should be posted not only in regard to his own little therapeutic machines, but also in regard to the applications of electricity on a large scale, in order to prevent accident and manage them after they occur. The technical terms used in electricity are beautifully simple and practical, while they commemorate the names of men whose contributions to science and industry are inestimable. For the sake of convenience we speak of the electric current as fluid, which it is not. We must remember that this is a figurative language. The fact is, that nothing actually flows from one pole to another, but that the intervening substance has imparted to it by the electrification some “mode of motion,” some condition of matter, some “vibration or tension of the molecules of the body said to be electrified.” But it resembles a fluid in many respects; for instance, the way in which the electricity always rushes from the higher potential to the lower, through the intervening wires or substances, as water always seeks the lower level. The measure of the force which the electricity exerts in this is called a volt. The measure of the resistance offered by the conductors to this electromotive force

similar to the resistance and friction offered by the pipes to flowing water, is called ohm. As the electric force triumphs over the resistance, the amount of electricity that passes on over the circuit divided by time, produces the measure of the intensity of the current, the ampere. The unit of electrical power is the product of pressure (electromotive force) of a current in volts, when multiplied by the volume expressed in amperes. The watt is the term used to express this volt-ampere unit of electrical energy. It equals 1-74 horse-power. The watt is the force of a current one ampere at a tension of one volt, and this term shows best the admirable simplicity of the technical language. If you wish to light your residence with twelve lamps of fifteen candle-power each, when you are told that each candle-power represents 3.5 watts, you know at once that you require 15×3.5 watts, which is 52.5 watts, and for twelve lamps, 630 watts. The other terms used are the farad, the unity of capacity; and the coulomb, the working unit of electricity. This represents a current having the strength of one ampere passing through a one-ohm resistance conductor in one second of the time. With these terms we all ought to be familiar, and not send back for the volts, when an invoice of "fifty lamps of twenty candle-power and forty-five volts" is delivered at your house, as the story is told of some one.—*Journal des Sciences Med.—de Lille, Jan. 4.*

Increase in Diphtheria Mortality.—According to *La Medicine Moderne* of January 15, 1896, the mortality from diphtheria in Paris, which for eighteen months has kept below the figure of ten per week, suddenly went up to twenty-three and seventeen respectively for the first two weeks of the year. The frequency of the disease, however, has not increased, but, on the contrary, in the second week of January there were but ninety-four cases reported as against one hundred and twenty-six in the preceding week. This naturally brings up the question again: Have we been passing through a period of mild diphtheria and will the antitoxin serum prove less efficacious when the virulence of an epidemic is pronounced.—*Medical Record.*

A Stout String as an Obstetric Aid.—A physician writes to the *Rev. de Ther*, November, 1895, describing the assistance he derives from a stout string, about a meter and a half long, in his obstetric practice. The patient placed in the usual position with the forceps in place, the physician seats himself on rather a low chair in front, as if to make an examination with the speculum. The string has a loop on one end which he fastens to the left handle of the forceps. It is then carried across to the right handle making a figure 8, two or three times repeated. Then the string is passed from left to right behind the physician's back, brought around and fastened to the right handle.

By bracing against the string around his loins, the physician can control the forceps while his hands are left free to guide it, moving it up or down, to the right or left, simply by twisting his body a little on the chair. With ordinary care this use of a string is a great advantage, but in careless hands it might do damage. The string must be in diameter of a penholder to insure its not breaking.—*The Journal of the American Medical Association*.

A New Healing Serum.—Dr. Marmorek, a young physician of Vienna, after four years of bacteriological research, has succeeded in cultivating a healing serum that is not only efficacious in the cure of erysipelas, but is equally so in infectious connective tissue inflammations, infectious bronchitis, and even in puerperal fever. The serum is a product of the streptococcus, cultivated along the same lines as the antitoxin for diphtheria. The investigations have been made in the Pasteur Institute in Paris, and have been observed with great satisfaction by some of the leading physicians of that city, among whom are Drs. Chautemesse, Bar, Cuffer, Sevestre, Pozzi, and Dieulafoy. Dr. Marmorek is quite satisfied with the results of the injection of this serum but believes they are more particularly promising in post-mortem wounds and those infectious punctures so often received in surgical operations. This serum in the hands of Dr. Chautermesse gives for erysipelas a mortality of 2.59 per cent, based upon 500 cases, as against 3.79 per cent for 554 patients treated by the most approved methods without serum injections. The general condition improves some hours after the operation; nervous manifestations and especially the delirium are very favorably influenced.—*Medical Record*.

Nitro-Glycerine in Sciatica.—Mikhalkine reports three cases of obstinate sciatica which were greatly benefited by nitro-glycerine given in the form of the official solution in one-drop doses three times a day. In one case, a patient aged forty-four, in whom salicylates, acetanilid, phenacetine, quinine, antipyrine, bromides, chloral, massage, sedative ointments and blisters failed to give relief, the following combination was entirely successful: Nitro-glycerine (one per cent solution), three to thirty minims; tincture of capsicum, ninety minims; peppermint water, three drachms. Three drops three times a day, for three days, and then ten drops three times a day. In another patient, a nervous woman, aged forty-five, with atheromatous arteries and sciatica, associated with atrophy of the muscles and hyperesthesia, the same combination, in conjunction with bromides, also afforded speedy relief. The third case was a man, aged forty, who suffered from a fever and severe pain in his right leg. A blister over the trochanter, with sodium salicylate and valerian, lowered the tempera-

ture, but failed to relieve the pain. After the lapse of four days the nitro-glycerine treatment was substituted, and this promptly lessened the pain and effected a cure within six weeks, the trouble not having returned after six months.—*University Medical Magazine*.

Treatment of Fissure of the Anus.—Dr. J. Cheron recommends the following procedure: After the situation of the fissure has been determined, he applied a small cotton tampon, saturated with a five per cent. solution of cocaine increased to ten per cent, if great sensitiveness exists. After five minutes the anaesthesia is complete, and now the fissure is cauterized with pure ichthyol, one or two drops being applied to it by means of a glass rod; this procedure is repeated after several days. On the fourth or fifth day after the application of the cocainized cotton, the anus can be readily dilated and the fissure examined and cauterized over its entire extent. As cicatrization proceeds, dilatation is carried out more and more readily, and in this manner it is possible to gradually remove the sphincteric contraction which so often complicates chronic fissures. By this procedure cases of fissure can be cured in about fifteen sittings; while in the chronic cases, with callous margin, a longer course of treatment is required, rarely, however, necessitating more than twenty sittings.—*Rev. des Malad des Femmes*.

Obesity in Its Relation to Menstruation and Conception.—Most obese women suffer from sterility, amenorrhea, scanty and painful menstruation, and atrophy of the uterus. Obesity of long standing is almost invariably accompanied by an anaemic condition of the blood, and is probably the cause of the amenorrhea and scanty menstruation. There are two classes of obese women. The first class includes those who have borne and nursed several children in quick succession. The second includes young women who have become obese from whatever cause. In the first class the climateric is premature, and the prognosis for future child-bearing is bad. In the second, the prognosis is good, if certain directions, given with a view to improve the general health, are strictly followed. The sterility may be due to undeveloped or atrophied generative organs, or to displacements resulting sometimes from the large deposits of fat or a catarrhal condition of the endometrium. The generative organs of both sexes become atrophied as obesity progresses. The return of the blood from the pelvis is so restricted that the bleeding results, causing abortion whenever conception occurs, or, failing in that, impaired vitality of the child if carried to term. The treatment consists of rigid diet, exercise, gymnastics, massage and electricity.—*Dr. E. S. McKee of Cincinnati, O., in the American Journal of Obstetrics*.

Digestible Food.—One of the biggest mistakes about food which people make is to forget that the true value of food to anybody is the measure of its digestibility. Half a pound of cheese is vastly more nourishing, as regards mere composition, than a pound of beef, but while the beef will be easily digested, and thus be of a vast service to us, the cheese is put out of court altogether for ordinary folks, by reason of its indigestibility. We should bear this rule in mind when we hear people comparing one food with another in respect to their chemical value.—*London Hospital*.

Acetanild Poisoning in Babes Due to External Application.—Chas. W. Rook, M. D., of Quincy, Ill., has had recently two cases in new-born infants of acetanilid as a dusting powder. In case of erythematous inflammation of the skin of the nates, thighs and groins, a powder composed of equal parts of subnitrate of bismuth and acetanilid was dusted on the inflamed areas of a babe four days old, three or four times during the afternoon and night. On the following morning the babe was found deeply cyanosed, and died a few hours later. From a single application to a babe two days old deep cyanosis followed. Twenty-four hours later it had fully recovered from the toxic effects.—*Journal of the American Medical Association*.

Prognosis in Cerebral Hemorrhage.—Barr, in a lecture upon this subject, delivered at the Leeds General Infirmary, presents the following conclusion: In any case of apoplexy due to hemorrhage into the hemisphere, if renal diseases, Cneyne-Stokes respiration, or hyperprexia, either or all of them, or two of them, are present, the patient will almost surely die. If no one of them, and does not supervene, he will probably recover regardless of the degree or duration of insensibility. Diabetes, chronic alcoholism, typhoid fever, or extreme anæmia (idiopathic) exert an effect just as fatal as associated disease of the kidney in hemorrhagic apoplexy.—*British Medical Journal*.

The Value of a Human Life.—Previous to the adoption of the present Constitution of New York State the maximum value of a human life had been placed at \$5,000, and no larger sum than this could be collected by the heirs in case a person was killed through the negligence of some person or corporation. The new Constitution, article 1, section 18, provides that the amount recoverable for the loss of life shall not be subject to any statutory limitation. The first case to take advantage of this change is that of a Brooklyn man, who brought action against a trolley company to recover damages for injuries which caused the death of his wife. The jury awarded him the sum of \$7,500.—*Medical Record*.

Pennsylvania Prohibits Exhibitions of Deformities.—An act was passed in Pennsylvania in 1895 making it unlawful and affixing a heavy penalty for any person to exhibit in any public hall, museum, theater or any other buildings, tent, booth or public place, for a pecuniary consideration or reward, any insane, idiotic or deformed person, or any imbecile.—*Journal of the American Medical Association.*

Why Women Live Longer Than Men.—In the forty-ninth registration report of Massachusetts the compiler presents the statistics of 203 persons who were reported as having died during the ten years (1881-90) at the age of 100 and over. Of this number 153, or 75.4 per cent, were females. By the state census of 1885 the number of females living over eighty years of age was nearly double that of males. The greater exposure of men to accidents, to weather agencies, to the constant strain of business life, to the anxiety of providing for the family, all tend to shorten the life of men. The deaths by accident among men are more than threefold greater than among women, and men commit suicide in about a threefold ratio as compared with women.—*Medical Record.*

Bed Sores.—Bed sores may be aborted if, as soon as the skin reddens, a solution of nitrate of silver of the strength of twenty grains to the ounce is applied with a brush to the part. This measure fails in paralytics.—*Hare.*

Common Salt for Ringworm.—Dr. F. J. Reilly concluded from the fact that children suffering from tinea tonsurans soon improve if sent to the seaside, that common salt would be good in the treatment of ringworm. He accordingly treated three successive cases in this way with remarkable success, a cure being effected in less than four weeks. A strong solution of sodium chloride was applied for five successive nights, washing it off in the morning with boric acid.—*British Medical Journal.*

Appendicitis.—"I am not always in a great hurry to operate, but I am more inclined to wait for the more acute symptoms to wear off, and operate, if at all, after suppuration has taken place, or during the quiescent stage between the attacks. I wish my voice was strong enough, just here, to call a halt to the men who say, 'Operate at once—not this afternoon or to-morrow, but now,' in all cases when the disease is recognized."—*McGuire.*

The Chemistry of Cleanliness.—The virtues of cleanliness are more than merely æsthetic. The sudoriferous glands perform the important function of throwing off the moisture produced during the combustion waste of tissue by the oxygen of the blood and secrete twenty-three ounces of perspiration in twenty-four hours. The con-

version of perspiration into vapor renders latent a great amount of heat and keeps the body cool. Water at 120 degrees F. is almost unbearable, but heat in an oven to the extent of 325 degrees F. may be borne for a time. In the twenty-three ounces of perspiration secreted daily there is about one ounce of animal matter. This is left behind on evaporation. Sebaceous glands also secrete oily and resinous substances. This, mixing with the solid matter and dirt, forms a compound which tends to clog the pores of the skin. The removal of this compound is largely the source of the feeling of the refreshment following a vigorous morning bath.—*Nature*.

The Boom in Medical Photography, which has been so luxuriantly in evidence, may receive a little shock by reason of the experience of a St. Louis surgeon, who has been sued for \$15,000 damages. The suit was brought by one of his patients, of whom he published a portrait in connection with a report of his case. The patient had given the physician the privilege of taking his photograph for a personal use, but not for publication.—*Medical Record*.

Instantaneous Process for Sterilizing Cotton.—An absolutely aseptic tampon can be made of any piece of cotton by twisting it on a stick or toothpick and dipping it into an alcoholic saturated solution of boracic acid for a moment. Applying a light to it the alcohol burns out, while the boracic acid prevents the cotton from burning. Five seconds are enough; as soon as the flame turns green it is extinguished. The cotton is still white, dry, scarcely warm, but absolutely sterilized.—*The Journal of the American Medical Association*.

The Whale Cure for Rheumatism.—It is reported that at the town of Eden, a place in Australia, which stands on the shores of Twofold Bay, there is a hotel where rheumatic patients congregate. Whenever a whale has been taken the patients are rowed over to the works in which the animal is cut up, the whalers dig a narrow grave in the body, and in this the patient lies for two hours as in a turkish bath, the decomposing blubber of the whale closing around his body and acting as a huge poultice. This is known as the "whale cure for rheumatism."—*Medical Record*.

REVIEWS AND BOOK NOTICES.

Diagnosis and Treatment of Diseases of the Rectum, Anus, and Contiguous Textures.—Designed for Practitioners and Students. By S. G. Grant, M. D., Professor of Diseases of the Rectum and Anns, University and Woman's Medical Colleges; Lecturer on Intestinal

Diseases in the Scarritt Training School for Nurses; Rectal and Anal Surgeon to All Saints, German, Scarritt's Hospital for Women, and Kansas City, Fort Scott, and Memphis Railroad Hospitals, to East-Side Free Dispensary, and to Children's and Orphans' Home, Kansas City, Mo.; Member of the American Medical Association, National Association of Railway Surgeons, the Mississippi Valley Medical, the Missouri Valley Medical, and the Missouri and Kansas State Medical Associations, etc., etc. With two chapters on "Cancer" and "Colotomy" by Herbert William Allingham, F. R. C. S. Eng., Surgeon to the Great Northern Hospital; Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum; Surgical Tutor to St. George's Hospital, etc., etc., London. One volume, royal octavo, 400 pages. Illustrated with 16 full page chromo-lithographic plates and 115 wood engravings in the text. Extra cloth, \$3.50 net; half russia, gilt top, \$4.50 net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry street, Philadelphia; 117 W. Forty-Second street, New York; 9 Lakeside Building, Chicago.

Orificial surgery is becoming such an important specialty in medical practice that many books are being written, which are directed exclusively to this region of the body.

The work under consideration treats of the diseases from a medical as well as a surgical standpoint. The language is as concise as is consistent with clearness, but at the same time the explanations and technique of the operations are sufficiently full to be readily comprehended by any student who may not have made this branch a specialty.

The subject matter is well classified and indexed, so that anyone, with the greatest ease, may find at once the particular facts desired.

The book is profusely illustrated, many of the plates being in colors, and all are original, most of them being taken from photographs of the author's cases.

It is a book well worth owning and studying, both by general practitioners as well as by specialists in this new field of surgical practice.

The presswork, binding and especially the handsome chromo-lithographs are of the highest order, and the moderate price of the book enables it to be in the hands of every student and practitioner.

READING NOTICES.

Messrs. Theo. Metcalf Co. have just put on the market a tablet of Kola which bids fair to become very popular with those who prescribe Kola, and who does not in these days.

Hydrozone in Purulent Otitis Media.

A REPORT OF A CASE SUPPOSED TO INVOLVE INFLAMMATION OF THE MASTOID.

By Wm. Clarence Boteler, M. D., of Kansas City, Mo.

On November 4, 1895, I was consulted at my office by Robert P——, aged 24 years; occupation, laborer in the Armour Packing Company. The patient complained that for about four weeks he had been suffering from intense pain in his left ear, making it impossible for him to sleep at night, or rest during the day. The pain was so severe that at times he apparently lost consciousness and it seemed to extend through his entire brain. Upon inspection, the man's face was found terribly deformed; an edematous swelling the size of one half of an ordinary loaf of baker's bread occupied the usual location of the ear and the surrounding muscles. The auricle of the ear was almost buried in edematous tissue; upon palpation the part was found intensely tender, and deep pressure evoked expressions of excruciating pain. The integument and sub-cutaneous tissue were thoroughly infiltrated. Ichorous, fetid pus was slowly exuding from an almost imperceptible meatus. The patient expressed feelings of chilliness, showing a possible septic contamination of his system. Every indication and sign pointed to possible suppuration of the mastoid cells—tenderness upon pressure over the mastoid being very marked. Efforts to localize the tenderness, whether in external meatus or mastoid, for discriminating diagnosis, were unsatisfactory. I concluded to withhold a positive diagnosis as to whether the condition was purulent otitis media or suppurative inflammation of the mastoid, and used tentative treatment for a short while. I immediately placed the patient under heroic doses of elixir of the six iodides internally. After laborious effort I succeeded in separating the edematous tissue sufficient to admit the introduction of a small Eustachian catheter into the external meatus. Through this, with a small hard rubber syringe, I injected four times daily about one-half an ounce of hydrozone, allowing it later to drain away, advising hot fomentations. The patient was confined to his bed and the best possible hygienic surroundings provided. In twenty-four hours after the treatment was commenced, the intensity of the odor, amount and character of the discharge had manifestly lessened, the swelling was reducing and the patient feeling better. The edema being lessened, the aperture was enlarged. I now recommended the injection of hydrozone through a catheter of larger calibre, every hour, requiring the head to be kept turned to the opposite side for ten minutes to allow the percolation of the hydrozone as deeply as possible into the middle ear, before reversing the position to allow drainage. We continued this treatment for a week, the man's recovery progressing with remarkable rapidity, his pain and the constitutional symptoms having disappeared about the third day. At the end of eight days the swelling had entirely disappeared, his features were again normal, and he expressed himself as perfectly well. An examination showed a circular perforation in the ear drum the size of a shot, proving that the case had been one of purulent otitis media, with septic contamination of the patient's system, and infiltration of the surrounding cutaneous tissues. Small incisions were made at two different places to permit the exit of pus from the integument. The mastoid was found not involved. The rapidity with which the disease yielded after the introduction of hydrozone through the catheter into the middle ear impressed me with the wonderful value of the preparation; for, struggling with such cases during a practice of seventeen years, I have never seen its efficiency equaled by any medicinal or operative procedures.

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Association of the Alumni of the Albany Medical College.

TWENTY-THIRD ANNUAL MEETING.

The twenty-third annual meeting of the Association of the Alumni of the Albany Medical College, was held in Alumni Hall on Tuesday, April 14, 1896. The usual informal reception was held in the library, where coffee and sandwiches were served, photographs exhibited and greetings exchanged, between the hours of 9 and 11 A. M. The meeting was called to order by the president, Dr. Theobald Smith ('83), of Boston, Mass., at half past ten o'clock.

The following members of the Association, with invited guests, students of the college and others interested were present: I. I. Buckbee, ('41); R. V. K. Montfort, ('56); M. Felter, ('59); H. Bendell, A. Vander Veer, ('62); A. B. Husted, ('64); L. Hale, ('68); D. C. Case, W. Hailes, M. Perkins, W. G. Tucker, ('70); J. B. Stonehouse, G. L. Ullman, ('71); F. Garbutt, ('72); D. H. Cook, ('73); H. E. Mereness, ('74); W. O. Stillman, ('78); E. A. Bartlett, O. F. Kinloch, W. J. Nellis, C. E. Parish, ('79); G. S. Munson, ('80); F. L. Classen, C. H. Crawford, J. H. Mitchell, E. P. Van Epps, ('81); F. A. Palmer, W. B. Sabin, T. F. C. Van Allen, J. B. Washburne, ('82); J. F. Reilly, W. L. Schutter, Theobald Smith, ('83); R. Babcock, L. B. Rulison, B. J. Ward, ('84); J. A. Holley, C. B. Mallery, ('86); W. G. MacDonald, A. Macfarlane, C. H. Moore, ('87); R. Bestle, G. E. Lochner, ('88); A. H. Bayard, ('89); E. V. Colbert, W. H. Happel, A. G. Root, ('90); C. E. Davis, L. LeBrun, S. LeFevre, G. A. Williams, J. W. Wiltse, ('91); W. I. Goewey, W. G. Lewi, L. H. Neuman, H. S. Pearse, C. F. Theisen, ('92); J. Jones, J. B. Swett, Jr., P. G. Waller, ('93); W. H. George, J. M. Moore, R. Sheldon, ('94); F. J. Crummey, E. N. K. Mears, W. M. Rapp, R. A. Sauter, W. J. Wansboro, ('95); A. C. Baxter, J. W. Blakely, W. I. Brandow, J. P. Carver, F. T. Clark, H. O. Fairweather, L. L. Fillmore, I. D. Hasbrouck, E. Holley, G. V. Johnson, H. W. Keator, F. A. Keller, F. McLean, A. P. Muir, F. P. O'Brien, E. J. Parish, F. X. Pidgeon, A. H.

Rodgers, T. A. Rogers, W. H. Sanford, W. H. Schwartz, R. J. Taylor, J. D. Vedder, ('96); J. P. Boyd, F. C. Curtis, H. Hun, C. S. Merrill, S. R. Morrow, S. B. Ward, (hon.)

The president introduced Professor Samuel B. Ward, M. D., who delivered the following address of welcome to the alumni on behalf of the college faculty:

ADDRESS OF WELCOME.

Mr. President and Gentlemen of the Alumni Association :

The faculty have assigned me the pleasant duty of welcoming you to the twenty-third annual gathering. We are glad to have each and every one of you come back and visit your Alma Mater at any time, but we are particularly glad to see so many of you at the annual reunions.

Many things go to make up a strong college. The course of instruction must be theoretically a complete one, and it must be carried out faithfully in all its details. Attendance on the part of both teachers and students must be prompt and regular. Teaching by lectures must be supplemented by quizzes, clinics, laboratory work, dissecting, practical demonstrations in physical diagnosis and the use of the microscope, and by diligent reading on the part of the student. But no matter how complete a course may be in every particular, the success of a college is in a certain degree measured by the number of students within its walls. We honestly believe that we can prove to you, if you will take the trouble to investigate the matter, that we give to our students as sound and thorough a practical education in medicine as is given by any similar institution in the country. In other words, we have always endeavored and still endeavor to deserve your entire confidence. We believe that we have it; and we are impelled to that belief in part by the fact that so many of you have sent your students to us. For this we tender to you our hearty thanks, and beg your continued support so long as in your opinion we merit it. We point with pride to the fact that the registration of students during the year just closed is the largest it has ever been in the history of the college. And this success has been attained, as you all well know, during a time when the standard of admission has been raised, the course has been so lengthened as to demand increased application on the student's part, and the final examination is supplemented by that of the state board. If those of you who graduated even five years ago will compare the college curriculum of your day with that set forth in the last catalogue you will readily see how much greater are the opportunities for acquiring knowledge *now* than they were *then*—how much more the student of to-day must know to pass our final examination than was required of you. When some of us graduated twenty or thirty years ago the bacteriological origin of disease was entirely unknown, and in that department alone the student now has nearly as much to learn as he formerly had in any one of the principal branches.

It is but proper to add that we fully believe that you are just as much interested in, and just as proud of, the success of the college as we are, and that we all desire to co-operate to secure the same end.

But, gentlemen, the speakers and subjects that are to follow will interest you much more than anything that I could possibly say, and I will only repeat, on the part of the faculty, that you are heartily welcome, and that we trust that both socially and professionally you will find the day both pleasant and profitable.

On motion of Dr. W. L. Schutter, the reading of the minutes of the last annual meeting was dispensed with, and the minutes as printed adopted.

Dr. W. G. Mac Donald moved that the Chair appoint a committee of five to nominate officers for the ensuing year. Carried. The president appointed as such committee, Drs. W. G. Mac Donald, ('87); H. E. Mere-

ness' ('74); R. Babcock, ('84); D. C. Case, ('70); and J. Jones, ('93). The committee retired.

The report of the executive committee and recording secretary was then presented. It stated that two meetings had been held during the year. At the meeting held May 29, 1895, the recording secretary presented a report of the last annual meeting, including an account of the commencement exercises and Alumni banquet, and he was authorized to have the same printed in the Albany Medical Annals, and to cause 1,400 reprints of the same to be made in the usual form and distribute them to the members of the association. The recording secretary also presented a statement of the Alumni banquet account from which it appeared that the receipts from tickets sold had been \$115, with disbursements as follows: Rent of Odd Fellows' Hall and kitchen, \$60; orchestra, \$20; D. McElveney & Sons, for banquet, \$248; cigars, \$21; door attendants, \$5. Total, \$354; leaving a deficiency of \$239. which had been paid by the college faculty. At the meeting held February 24, 1896, the distribution of the proceedings was reported. A copy had been sent to each of the Alumni, together with a college catalogue and treasurer's blank. The order of exercises for the annual meeting was discussed and the following committees were appointed: Arrangements for meeting, Drs. Tucker, Cook and Stonehouse; lunch and dinner, Drs. Tucker, Nellis and Root; speakers and toasts, Drs. Vander Veer, Bendell, Mereness and Nellis; reception, Drs. Macfarlane, VanAllen, Bartlett, Dwyer, Schutter, Sabin and Babcock. On motion, the faculty of the college were invited to participate in the exercises of Alumni day and to appoint some representative to deliver an address of welcome to the Alumni at the opening of the annual meeting. The historian reported that the following class historians had agreed to report for their respective classes, at the coming annual meeting: For class of '56, Dr. R. V. K. Montfort; for '66, Dr. D. V. O'Leary, and for '86, Dr. W. P. Brierley, no class having been graduated in '76. The corresponding secretary was authorized to have the usual notices announcing the annual meeting, invitations, etc., printed and to issue the same; also to procure suitable badges. The recording secretary reported that the number of names with addresses upon the Alumni list was 1,252, and the total number of graduates to, and including the class of '95, was 2,102. Deaths reported during the past year, sixteen. On motion of Dr. Bendell, the report was received, adopted and ordered placed on file.

The treasurer, Dr. T. F. C. Van Allen, presented his report for the year, from which it appeared that the balance on hand at time of last annual report was, \$147.33; received during the year for dues, \$112.00, and for interest, \$6.31. Total, \$265.64. Disbursements, \$154.80, and balance on hand, \$110.84. On motion, the report was referred to a committee consisting of Drs. E. V. Colbert, W. Hailes and H. B. Stowell, who examined the same, compared the disbursements with the accompanying vouchers, and subsequently reported it correct. On motion, the report of the committee was received and the committee discharged, and the report of the treasurer accepted and ordered placed on file.

The president's address being the next order of business, Vice-President Montfort was called to the chair, and President Smith delivered the following address:

PRESIDENT SMITH'S ADDRESS.

Fellow Alumni and Gentlemen:

Another year has receded from us since we last met in this hall to exchange our annual greetings. Which one of us does not say to himself, how rapidly it has gone by? Perhaps I should except those who have joined our ranks to-day. To them the year may have been far too long for the scholastic burdens which weighed down upon them.

* * "Slow pass our days
In childhood, and the hours of light are long
Betwixt the morn and eve; with swifter lapse
They glide in manhood, and in age they fly."

While I do not wish to call you who are to leave this institution to-day, children, I think that you were, nevertheless, in a certain sense, professional children. To-day you are to assume the responsibilities of professional manhood. There can be no more fitting time than to-day for all of us to look back upon the days of our professional childhood passed happily and with but little care in these halls. We leaned heavily upon our teachers and felt that it was, after all, their responsibility and not ours whether they should let us go forth as physicians or not. We were in truth children and as such we stemmed and turned back the current of serious thought into the morrow of our post-graduate life. And when that morrow finally came, some, dazed by the importance of the trust imposed, shrank back into temporary childhood in some hospital, some old world institution or some quiet laboratory; some forsook their career altogether; others pushed out boldly into the midst of the new life. As the student who thinks he has mastered the language of another country from books, finds himself both deaf and speechless before the denizens of that country, so the young doctor must frequently feel himself paralyzed before the mysteries of the sick bed.

On this anniversary day we come together to find ourselves grown somewhat toward the stature of our chosen lifework. On some such anniversary as this we were made doctors by the fiat of a university and on this day we gather to see whether we have not grown to be doctors. Woe to those who do not from the outset realize that it is a growth and not the fiat of a diploma, that secures to them a place in this busy, thronging world from which to serve their fellow men.

I presume the question has frequently come to you about to go forth, whether you will be needed and whether, perhaps, there is not already an oversupply of physicians, which will make it difficult for you to find employment. Undoubtedly there may be too many physicians, counting the good, the indifferent and the poor together, but it seems to me that society, as at present constituted, will need an increasing number of well-trained, conscientious physicians. Social evolution creates new diseases and new pathological conditions in men which require increased attention and study on our part. Society becomes, in fact, more and more indebted each year to the physician for its continued existence. I can also add a few cheering and encouraging words recently spoken by President Eliot of Harvard University:

"The medical profession has before it an entrancing prospect of usefulness and honor. It offers to young men the largest opportunities for disinterested, devoted, and heroic service. The times are past when men had to go to war to give evidence of endurance, or courage, or capacity to think quickly and well under pressure of responsibility and danger. The fields open to the physician and surgeon now give ample scope for these lofty qualities.

"The times are past when the church alone asked men to devote themselves patiently, disinterestedly, and bravely to the services of their fellow men. The medical profession now exhibits in highest degree these virtues. Our nation sometimes seems tempted to seek in war—that stupid and horrible savagery!—for other greatness than can come from vast natural resources, prosperous industries and expanding commerce. The pursuits of peace seem to pall for lack of risk and adventure. Would it might turn its energies and its longing for patriotic and heroic emotion into the immense fields of beneficent activity which sanitation, preventive medicine and comparative medicine offer it! There are spiritual and physical triumphs to be won in these fields infinitely higher than any which war can offer; for they will be triumphs of construction and preservation, not of destruction and ruin. They will be triumphs of good over evil, and of happiness over misery."

Society is slowly beginning to recognize the debt it owes to medicine in its various departments, but there is none to which it, as a whole, owes more than to preventive medicine. Possibly some great war, for which so many appear to be languishing, would show what we do not see so plainly in times of peace, the great but quiet and almost frictionless work of sanitary organization holding the reins of a number of restive disease germs whose power over society is by no means extinct but very probably as great as ever. Let such a war break down this great sanitary machine even temporarily and we would have a splendid opportunity of seeing these restive organisms let loose upon the community and scatter typhoid and typhus, smallpox and cholera and their allies far and wide. We trust that such an opportunity will never come to demonstrate the utility of preventive medicine. Let us rather try to enlist the interest and the support of the people by a more sane and civilized method, that of instruction in the laws and principles which control our lives under the complex conditions imposed upon us by modern society.

Of the many ramifications of preventive medicine by which it sends its protecting influence to all the people, the rich and the poor alike, I shall devote a little time only to its function as a guardian of drinking water. When we speak of drinking water nowadays there arises immediately before us its greatest enemy—that spectre called sewage. The two are inseparable in the mind of the sanitarian, for one cannot be kept pure without suppressing of the other. Water is taken from the earth and sewage is committed to it; water is taken from streams when the earth supply is inadequate or undesirable and sewage is poured into streams. Our great streams as well as our little streams are rapidly becoming mere open sewers. The thoughtlessness and indifference of the bulk of the people to pure water has been strongly and picturesquely expressed by Ruskin :

"Twenty years ago there was no lovelier piece of lowland scenery in South England, nor any more pathetic in the world, by its expression of sweet human character and life, than that immediately bordering on the source of the Wandle, and including the low moors of Addington, and the villages of Beddington and Carshalton, with all their pools and streams. No clearer or diviner waters ever sang with constant lips of the hand which 'giveth rain from heaven'; no pasture ever lightened in spring time with more passionate blossoming; no sweeter homes ever hallowed the heart of the passer-by with their pride of peaceful gladness—fain hidden, yet full confessed. The place remains (1872) nearly unchanged in its larger features; but with deliberate mind I say, that I have never seen anything so ghastly in its inner tragic meaning—not in Pisan Maremma, not by Campagna tomb, not by the sand isles of the Torcellan shore—as the slow stealing of aspects of reckless, indolent, animal neglect over the delicate sweetness of that English scene. Nor is any blasphemy or impiety, any frantic saying or godless thought more appalling to me, using the best power of judgment I have to discern its sense and scope, than the insolent defiling of those springs by the human herds that drink of them. Just where the welling of stainless water, trembling and pure, like a body of light, enters the pool of Carshalton, cutting itself a radiant channel down to the gravel, through ways of feathery reeds, all waving, which it traverses with its deep threads of clearness, like the Chalcedony in Moss-agate, starred here and there with the white Grenoulette; just in the very rush and

murmur of the first spreading currents, the human wretches of the place cast their street and house foulness; heaps of dust and slime and broken shreds of old metal, and rags of putrid clothes, which, having neither energy to cart away, nor decency enough to dig into the ground, they thus shed into the stream, to diffuse what venom of it will float and melt, far away, in all places where God meant those waters to bring joy and health. And in a little pool behind some houses farther in the village, where another spring rises, the shattered stones of the well, and of the little fretted channel which was long ago built and traced for it by gentle hands, lie scattered, each from each, under a rugged bank of mortar and scoria, and bricklayers' refuse, on one side, which the clean water, nevertheless, chastises to purity; but it cannot conquer the dead earth beyond; and then circled and coiled under festering scum, the stagnant edge of the pool effaces itself into a slope of black slime, the accumulation of indolent years. Half a dozen men, with one day's work, could cleanse these pools and trim the flowers about their banks, and make every breath of summer air above them rich with cool balm, and every glittering wave medicinal, as if it ran, troubled only by angels, from the porch of Bethesda. But that day's work is never given, nor, I suppose, will be; nor will any joy be possible to heart of man for evermore about these wells of English water."*

Ruskin thus eloquently stigmatizes what is going on everywhere around us with a rapidity which makes us pity our children for the loss that awaits them and the dangers that are piling up around them. Sanitary science has long been warning the public and pointing to avenues of honorable escape from the growing difficulties, but indifference, ignorance and fear of expenditures are still holding many communities in what appears to become for them a death-like grip. Here, as in many other phases of modern society, education will be the only escape from growing evils.

Let us for a few moments turn to some significant facts brought out in recent years in regard to the function performed by water in carrying disease and the means now within reach for minimizing this danger.

The dissemination of certain infectious diseases by polluted water supplies has been demonstrated so frequently that any illustrations would be quite out of place at this time. The fate which overtook the city of Hamburg in 1892, when Asiatic cholera appeared in her midst like a thunderbolt out of a clear sky, is still in the minds of many. All facts brought out by a persistent study of the epidemic pointed to the drinking water. Since then the methods of water analysis have been so far improved that the micro-organism of Asiatic cholera may be quite readily detected in infected water and other less conspicuous epidemics have been traced to it. In fact the large water courses of the German empire were in 1893 and 1894 the highways of this organism, and only the utmost vigilance of the German government prevented a general dissemination of this plague during these years. The vigilance consisted in the establishment of bacteriological laboratories and the utilization of those already in existence for the examination of samples of water and of the stools of infected and suspected persons on the watercourses. Thousands of samples were subjected to the scrutiny of the microscope and the culture tube and the hidden and devious ways of the comma bacillus were laid bare.

Hamburg drank unfiltered polluted river water until the city became paralyzed by this plague. With superhuman effort immense improvements have been effected since then and now the inhabitants drink only filtered water. For many communities only the severest visitations are demonstrative of danger, and not until hundreds and thousands of victims have paid the penalty demanded by filth, is the stimulus sufficient to create a salutary change. Dr. H. P. Walcott, in one of his Lowell lectures, delivered in 1896, referred as follows to certain prophetic utterances of Virchow:

"At a memorable meeting of the German Association for Public Health, held at Berlin in 1883, there was a long discussion upon the question of the disposal of the sewage of large cities. Virchow had maintained, with all the ability which he shows in so many

* Quoted in Poore's "Rural Hygiene."

fields of science, that sewage must be kept out of the watercourses, whether large or small. Emmerich of Munich, also one of the well-known sanitary authorities of the world, had, in opposition, brought up the example of the sewerage system of Munich, adopted under the advice of Pettenkoffer, the Nestor of public hygiene. Here the sewers discharge the sewage into the Isar without preliminary treatment of any sort. The river is a very rapid stream carrying at all seasons a large volume of water, and there does not happen to be any large population on the banks of the stream for whom a water supply from the river is necessary. There is not, as yet, evidence that the amount of sewage added to the river at Munich has caused any injury to the people living lower down upon the stream.

"Emmerich was not content to rest his case upon the favorable experience of the Bavarian capital, but went on to use these words: 'Hamburg, also, uses the water of the Elb, which is soiled with the sewage of Prague, Dresden and Magdeburg and never a man in Hamburg has been sickened by it.' The assembly to which these words were addressed had no answer to make except the wise admonition of Virchow, that an example sometimes answered itself if you waited long enough.

"In nine years the answer came and has been heard round the world."

The interest which a community, a state or a nation possesses in keeping abreast of the sanitary requirements of our present and future social system is indicated by the sacrifices made to meet these requirements. Our own country cannot boast much in this respect. The less is said of it the better. We have, however, in our sister state of Massachusetts an exception to the general rule well worth imitating. Money has been freely given by its legislators for the elucidation of sanitary problems and the results of the investigations conducted by the state under the direction of the State Board of Health upon problems of water supply and sewerage are freely used and their great value unhesitatingly acknowledged by sanitary authorities the world over. This I may say without hesitation since my own work under the State Board was begun only after all this work had been done and the results made accessible to the people of the whole country. The investigations of most interest to us are those concerning the filtration of drinking water and sewage. In the experimental laboratory at Lawrence, devoted exclusively to this subject for a number of years, have been studied the various processes of filtration in use, the kinds of soil best adapted for this purpose, the relative rapidity with which water passes through filter beds, the change undergone by the organic matter in the water during its passage, and the number of bacteria lost on the way. It was found that intermittent downward filtration was the best process, for this method combines mechanical with biological filtration. It calls into play the beneficent action of the soil bacteria. This double function has been well described by Professor Sedgwick, biologist of the State Board of Health, in the following words:—

"The soils are not mere strainers, for at first they fail to work. They are rather like the living sponge, an animal whose body is everywhere channelled with fine passages lined with living cells. The fine passages in the body of the sand or soil are the spaces between the sand grains; the living cells are the micro-organisms which, after a few days, come to dwell upon the sand grains and line the passages. Very much as the living cells of a sponge absorb and destroy the organic particles passing by them, the bacteria resident upon the sand grains absorb and work over the organic matters of the sewage poured upon the filter. And exactly as the micro-organisms of which a sponge is essentially composed use oxygen to support their respiration so those of a filter must have abundant air. This means that the sewage which is always destitute of oxygen must not be applied continuously, but intermittently, so that air may follow it down through the filter and keep from suffocating the purifying micro-organisms."*

By this process of intermittent downward filtration 99 per cent of all bacteria in drinking water are removed. Sewage is converted into a clear liquid nearly free from bacteria and organic nitrogen. The work did not stop here for the principles are now being practically applied. A number of communities in the state are filtering their

*The *Forum*, February, 1896.

sewage on specially prepared lands. Our interest naturally centres upon the utility of sand filtration in eliminating sewage and pathogenic bacteria from polluted drinking water. That this may be satisfactorily done is shown by the experience of the city of Lawrence.

The vital statistics relating to typhoid fever in Massachusetts have shown that as a rule the highest death-rates were in those towns depending on wells for drinking water. The introduction of a pure public supply was followed by a decided decrease in the death-rate. In two cities, however, which drew their water from a polluted river no such decrease was recognizable. These cities are Lowell and Lawrence on the Merrimac. Lowell draws its water from this river and discharges its sewage into it. Lawrence, nine miles farther down, took this polluted water. In these cities, typhoid fever persisted during the winter months when other cities were comparatively free. Moreover the increase of disease at Lawrence usually followed that in Lowell by a month, so that the inference that the disease came from Lowell sewage became irresistible. Other observations, into which it is unnecessary to enter on this occasion, pointed to the same conclusion. In 1892 the city undertook the construction of a sand filter, the plans of which had been devised by Mr. H. F. Mills, civil engineer, and a member of the State Board of Health. This filter incorporated the principles brought out in the experimental investigations made under the direction of the Board. With an area of two and one-half acres it was designed to yield about five million gallons of water per day. The water in this filter passes downward through a bed of sand about five feet deep, to reach the underdrains which convey it to the pumping station. There is a daily intermission of several hours which permits the filter-bed to empty itself of water and to become filled with air. This intermission provides the organic life in the pores of the sand with sufficient oxygen to carry on the work of purification with the greatest efficiency.

The sewage-polluted water, deprived of nearly all its bacteria by this process, has been unable to carry the germs of typhoid into as many homes as heretofore. While the death rate from typhoid fever in 1889 was as high as 13.75 per 10,000 living, and continued high until the filter went into operation; the figures for the year 1892 being 11.11 per 10,000 of population, the death-rate steadily fell from that time until in 1895 it was but 3.07 per 10,000. Of the sixteen persons who died of typhoid fever during this year, nine had exposed themselves by drinking Merrimac water from the canals supplying the mills with water power; two became ill just after an absence from the city.

I have presented this isolated instance of a town whose high death-rate from typhoid fever before the filtration of its drinking water aroused the attention of all interested in the protection of the people from preventable diseases, because figures speak most convincingly and because the facts are the result of an experiment, conducted not in the laboratory, but upon the inhabitants of a large town. Possibly the future may show still better results by a yet greater efficiency of methods of filtration, but the facts before us prove conclusively that the sanitary authorities of our sister state are on the right track and that all that is necessary is to push on as they have begun.

The world must rely chiefly on the maturing generations for the execution of those plans and projects which the older generations have worked out and cherished. As the world moves slowly and as the movement depends largely upon education we can not expect much in a generation. So the accumulating knowledge of one generation is handed over to another to apply. It is like the talent which must not be hidden away or buried, but put to use. Those who leave this institution to-day, whose hopes and purposes and aspirations have not yet been thwarted by the conflicting currents of the every-day struggle for existence and who see their goal straight before them are the ones who are to carry out and to bring to fruition the great achievements of the two past decades in all departments of medicine. But you must keep steadfastly in view that you are to-day sent not only to heal but prevent disease. Unless you realize this fully you have profited but little by your stay here. From all departments of medicine comes the question what is the cause of this disease? And why the cause, we ask? Is it not enough to treat the disease itself, for the cause is something originally exterior, some force working upon the

body from without. But, it is answered, if we once know this force from without we may be able to destroy it, suppress it, stamp it out as we would a spark of fire. When this force has once taken possession of the body we can, in many cases, only stand by to watch the struggle after having given the body the fairest chance compatible with our resources. The young physician, once fully alive to the importance of preventive medicine, will not fail to impress upon the community in which he lives the necessity for better and healthier living. But, he must not look forward to an easy task before him. He will have indifference, ignorance and avarice to confront and his efforts may redound to his temporary injury. Nevertheless, he should strive to be the oracle of his community in matters pertaining to health and not merely the one who prescribes after the mischief has been done. He should be a trusted adviser in all that tends toward better living. His attention should be given to the home and the school, to the drinking water and the waste. He should urge the beautifying of the whole environment as a fitting climax to hygienic endeavors. In this difficult work there will be many compensations. The intelligent people are, as a rule, ready to make sacrifices to prevent disease, provided they understand the situation. Few realize that improvements in sanitation are a kind of insurance premium, paid to prevent calamities. In thousands of villages the people have drunk the water of wells near their cesspools without noticing any bad effects ascribable to contaminated water. Many large communities have used sewage-polluted water without any unusual death-rate. There may be much disease, perhaps, but it is not concentrated enough to produce alarm. But let some unusual combination of circumstances cause a more than usual infection, possibly with an imported disease-germ or a native one of more than the usual virulence, and the catastrophe which follows we should have been only too ready to sacrifice everything to avert. But then it is too late. It is here where sanitation steps in as an insurance. We do not expect or look forward to the destruction of our homes by fire, yet we are willing to pay annually a certain amount to protect us from any possible loss. The case is equally true, but not so plain, where disease is concerned and hence the difficulty encountered by physicians where an enlightened public spirit fails to make itself felt.

I have thus far had in view the smaller towns and villages where trained health officers are lacking and where the work of sanitation devolves upon the practicing physician and public-spirited citizens. In our large cities the case is different. Here health officers who give much or all of their time to sanitation should be heartily supported in this work which, at best, is difficult. You should carefully refrain from breaking or overstepping those regulations designed to protect the public health, even though such acts may not be followed by evil consequences either to yourself or to others. The temptation to protect the client at the expense of the public is always strong and liable to paralyze even the best efforts of the proper authorities. Besides the support to be given to those directed by law to watch over the public health, there is much other work to be done by the city doctor. There exists at the present time a widespread activity having for its object a study of social conditions and the best means for their amelioration. Thanks to the influence of modern science and universal education, much of the evil is rightly laid at the door of unsanitary, depressing surroundings. The physician, above all others, knows the hidden causes of poverty, vice and disease, and from his unlimited store of information he could soon show the world, if he had the time or the opportunity to speak, the most fruitful way of dealing with the growing distress of the poor in our large cities. Crime, vice and disease, bred of a confusing mixture of heredity, poverty and ignorance, can not be properly dealt with without the co-operation of the physician and here his knowledge of the general laws of hygiene must be most thorough before he can safely contribute his part to the scheme of social regeneration. The physician in all such phases of work should be a brake upon visionary efforts and enterprises, for he realizes best the limitations of man in his struggles toward a higher plane of existence,—limitations inexorably defined for him by nature herself.

To deal successfully with the difficult tasks of various kinds which may be entrusted to you, let me urge upon you the importance of a liberal, receptive mind, free from the

bigotry of the old as well as the conceit of the new. Do not forget that the new grows upon the old and that it is often unripe. The world's fund of knowledge and information is in a continual state of fermentation and only now and then comes to a rest. Sometimes the best, that which is the leaven for the next fermentation, sinks to the bottom, while the froth remains on the top. In this continual movement many apparently well-established theories disappear and others take their places. The history of sanitary science, like that of other fields of human endeavor, is strewn with the wrecks of cherished theories. In this coming and going the physician must weigh as the judge would, free from advocacy but full of information. Pope's shallow advice: —

“Be not the first by whom the new are tried
Nor yet the last to lay the old aside,”

may do for fashion but not for medicine. If your judgment tells you that the newest is the best, you should not hesitate to use it. In your prognosis you will show your mastery or your ignorance and neither will be forgotten.

These few words upon the important and intimate relation between the work of the regular practitioner and the public health express but very inadequately the true situation. All that I can do is to enlist your interest and support and to enlarge your professional horizon as you enter upon your life work. Undoubtedly some of you are picturing to yourselves the busy, tired practitioner giving much time to the improvement of the public health and thereby knocking out from under him, one by one, the supports upon which his income for himself and family rested. Your imagination may tell you that the efforts of this doctor have been so successful that he has eradicated all disease and that he has now become an object of public charity. I need not say that this millenium is not likely to appear in our or in any other day. Let not, therefore, the expectation of universal health darken your days or limit your efforts in its behalf. Like the tide, life will continue to come and go, and if you can save but a few lives from unnecessary illness or an unseasonable grave, you will have accomplished as much as this mortal world will permit.

The members of the class of '96, were present in a body, and rose as the president addressed them at the conclusion of his address, and received them into membership in the association.

Dr. Cook moved a vote of thanks to the president for his interesting address, a copy of which he was requested to furnish for publication. Vice-President Montfort put the motion to a vote and declared it unanimously carried.

President Smith then resumed the chair.

The report of the historian was then read as follows:

REPORT OF HISTORIAN, DR. E. A. BARTLETT.

History enables us, in a measure, to foretell the future. The history of an institution or of an organization is the sum of the history of those individuals who are or have been connected with it. For this reason the Alumni Association of the Albany Medical College has a good history. Every year some classes present a report for the preceding ten years and it is interesting to note the changes time brings to each. There will always be some member who has not remained within the fold. The privations, self denials and weary waiting which come to most medical men, prove more than they can endure. Glowing prospects and glittering inducements entice some to other fields. Circumstances over which they, apparently, have no control compel others to draw out from professional work. Many, holding fast the plow, with never a backward glance, find rich harvests reward their faithful work; harvests of money or harvests of fame, or both. He whom the society chose for its president last spring, is a conspicuous example of this class. Very many are

of that class of whom it might be said, "their virtues increase as the burden grows." Their days are spent in carrying blessing to their fellow men, but the rich reward is deferred. One and all, however, hold their Alma Mater in high esteem. The prosperity of the college is proof of the active love and interest of its Alumni, for a general advance along the line means hard fighting for privates and officers.

As year by year our association has steadily increased in numbers and influence the time seems ripe for it to take up some specific work for the material improvement of old Alma Mater. A most important work is that of securing a new home for her. The old homestead will ever be dear to those who have studied within its walls. Every room and all the halls are filled with joyous memories, yet the serious fact remains, the old building is too small. The expansion of the curriculum renders necessary much more room for class and laboratory facilities.

The munificent gift of Mr. Matthew W. Bender, to the cause of science, in the Bender Hygienic Laboratory, should serve as an incentive to each of us to make great efforts, and by gifts great and small, make certain the erection of a model medical college.

You, gentlemen of the class of '96, begin this day to make history as members of the Alumni Association, continue doing as you have during the years you have been in college, and your historian shall have great things to chronicle in his decennial report.

E. A. BARTLETT ('79),

Historian, A. A. A. M. C.

On motion, the report was received and ordered entered on the minutes.

Dr. H. D. Didama, the first president of the association, made an address and verbal report for the class of '46 of which he was a member. He briefly reviewed his experience of fifty years of active practice and professional teaching and his remarks were received with hearty applause.

Dr. R. V. K. Montfort presented the following report as class historian for '56.

DR. MONTFORT'S REPORT.

Fellow Alumni:

As historian of the class of 1856, I respectfully submit the following report:

The paths of the members of the class of 1856 diverged widely, when full of youthful hopes and inspired with lofty ambition, we received our diplomas and left behind us our Alma Mater.

None of the graduates of that year, located in the part of the state which has been my home, and it has not been my privilege to come into close association with any of the surviving members. Forty years have rapidly glided by and many, perhaps a majority of those whose addresses are unknown, have crossed the dark river.

I append answers received to letters addressed to those whose whereabouts could be ascertained. I regret that the number is so small.

(1.) W. E. Allen, Scranton, Pa. Located at Milford, Pa., immediately after graduation; moved to Scranton, Sept. 1858, where he has resided and practiced ever since, excepting during the War of the Rebellion; was acting assistant surgeon, U. S. A., at Chesapeake general hospital, Fortress Monroe, Va., 1862 and 1863, and at Tenth and Christian St. hospital, Philadelphia, 1864; served as assistant surgeon of board of enrollment until the close of the war; has served as health officer of Scranton, for the past nine years; was married June 6, 1865, at Brooklyn, N. Y., to Amelia B. Clapp; has one daughter Julia.

(2.) George M. Beakes, Bloomingburgh, N. Y. Opened the first doctor's office at Bergen Point, N. J., July, 1856; spent the winter of 1856-7 in the south; returned to New York in the spring of 1857 and located at Burlingham, N. Y.; remained there until Sept. 30, 1861, when he was appointed assistant surgeon First N. Y. Cavalry; served with that regiment in the Army of the Potomac until Sept. 16, 1863, when he was promoted to surgeon, 141st N. Y. Vols.; was mustered out June, 1865, and returned to Burlingham; in 1870

removed to Bloomingburgh; was married in 1857 to Elizabeth Bull, of Circleville; has had three children, Samuel Willard Beakes, of Ann Arbor *Argus*, and now postmaster of that city, Gertrude, and Robert Osborn, both at home; has been health officer of the town and has been twice elected member of Assembly, for Sullivan county, serving in the legislature of 1891 and 1892; served as examining surgeon for Pension Board, 1885 to 1889; was reappointed 1893 and still holds the office. After forty years of professional work, he still remains in active practice.

(3.) I. S. Becker, Altamont, N. Y. Located at Berne, Albany county, N. Y., and there practiced medicine till 1891; moved to Altamont, in the same county, and there continued the practice of medicine till the present time; has been fairly successful in a pecuniary sense; has endured many privations and great exposure; was married in 1860, to Kate E. Shultes; has had no children; has held position of health officer in Berne and also in Altamont.

(4.) A. H. Brundage, Xenia, Ohio. Practiced medicine in Delaware county, from 1856 till commencement of the war in 1861; entered United States service in 1861, as assistant surgeon of the 32d Regiment O. V. Infantry; was promoted surgeon in 1863; served as member of operating board 3d Div. 17th Army Corps, during the Vicksburg and Atlanta campaigns; located in Xenia, Ohio, in 1865; has been twice elected coroner of Greene county; has served six years as physician of the O. O. & S. O. Home; married Miss Frances H. Trall of Berkshire, Ohio; has two children, a son, aged thirty years, business partner with father, and a daughter, aged twenty-one; is prosperous and happy.

(5.) Lemuel Cross, Cobleskill, N. Y. Spent two years after graduation in obtaining experience for future work and two more in giving public lectures on hygiene; in 1860, located in Cobleskill; was appointed by Governor Morgan an examining surgeon of the draft; examined nearly three thousand subjects; served as pension examiner for eight years; has served as member and president of school board; has been married three times; first, to Miss Evelyn Thompson; second, to Mrs. Agnes E. Freeman, of Wyoming county; third, to Miss Theresa Ward, of Sharon Springs; has one daughter, Miss Evelyn Cross, aged twenty-eight years.

(6.) E. L. Ensign, Oxford, N. Y. Located in McDonough, Chenango county, N. Y., March 20, 1857, and practiced there until 1880, when, owing to hard work, broken rest and the numerous privations attending a country practice, he was obliged to relinquish business; spent a part of one year abroad; at the end of five years was so far recuperated as to be able to again resume business; located in Oxford, N. Y.; was married Feb. 14, 1859 to Mrs. Alcinda Randall Field; has had three children, one daughter died in infancy, another at twenty-five; a son is a D. D. S. practicing in Syracuse; has been supervisor of town of McDonough, 1858-59; has served as president of Chenango County Medical Society, 1868-69; is comfortably situated.

(7.) A. Middleditch, Waterloo, Iowa Located in Waterloo, just after graduation; after twenty years of practice, broke down physically; made a study of Electro Therapeutics and chronic diseases, while resting; now has hands full, with partner and eight assistants; married Miss Pauline S. Griffith soon after graduation; has had four children, two of whom are living.

(8.) R. V. K. Montfort, Newburgh, N. Y. Located in Newburgh immediately after graduation; was elected superintendent of schools in 1859; resigned in 1862 to accept a commission as assistant surgeon of 124th N. Y. Vol. Infantry, known as one of the eleven fighting New York regiments, on account of their heavy losses; was mustered out of the service June, 1865, at close of war, as surgeon; in 1866 was appointed first health officer of the city of Newburgh and served four years; was physician to the Alms House, 1865-66; physician to the Home for the Friendless, 1866-1882; a member of the staff of St. Luke's hospital from its organization till 1892 (fifteen years); in 1868 was assistant cattle commissioner to investigate the outbreak of Texas fever in Orange county, and inspector of State Board of Health, to investigate an outbreak of supposed typhus fever among the Italian laborers employed in the construction of the West Shore rail road; is a member of

Orange County Medical Society and has served as its president; is a member of Newburgh Bay Medical Society; in 1872 was for second time appointed superintendent of schools and served continuously until 1883; in 1887 was again appointed and still holds the office; in 1894-5 served as president of state council of superintendents; is a member of national council of superintendents; has been twice married, first, to Margaret Daughaday, in 1861, who died in 1864; second, to Theodosia B. Crowell, in 1864; has had three children, one died in infancy and two are living, Helen Gertrude, aged eighteen and Clive W., aged fifteen; served as secretary of Newburgh centennial committee in 1883; is a member of Ellis Post 52, G. A. R., and has served seven terms as its commander; is a member of 3d Corps Union, the oldest of the army societies formed during the War of the Rebellion.

(9.) Charles S. Richardson, Homer, Cortland county. Died two or three years after graduation, a victim of consumption.

(10.) Arnold Strothotte, St. Louis, Mo. Left for Europe immediately after graduating at Albany, attending clinics and taking practical courses at the universities of Wurzburg, Vienna, Prague and Berlin, until 1858; settled in Newport, Ky.; early in 1861 entered Union Army as surgeon of the 23d Regt. Ky. Vol. Infantry; left army at end of 1862 on account of ill health; moved to St. Louis, where he has since lived; married in 1860 to Miss Anna Grazer, of Cincinnati; has one son, living in Brooklyn, N. Y.; has served as member of board of public schools, of St. Louis, Mo.

(11.) Harry Van Wert, Raymerton, Rensselaer county, N. Y. Has practiced medicine in Rensselaer county, ever since graduation; was married, April 2, 1864, to Martha J. Russell; has had four children, two of whom are living; wife died April 26, 1880; has served as health officer and justice of the peace; is now a notary public.

R. V. K. MONTFORT,

Historian, Class of '56.

No report was received from the class historian of '66.

Dr. W. P. Brierley presented the following report as class historian of '86.

DR. BRIERLEY'S REPORT.

Mr. President and Members of Alumni Association:

It hardly seems possible that ten long years have passed since the class of '86 sat in this hall and were received as members of the Alumni Association of the Albany Medical College; but nevertheless, it is a fact. Of the forty-one members of the class of '86, I do not know of one who is not a credit to his Alma Mater and feel sure that every one of us is proud to say he is a graduate from the Albany Medical College; for as a medical educational institution, this college is equaled by few and surpassed by none in this country. Long may she live to continue the glorious work so nobly performed during her past life.

Of the forty-one members of the class of '86, thirty have settled in the great state of New York, one in New Jersey, one in Illinois, one in Montana, one in Massachusetts, one in Florida, one in Vermont and five have been lost track of.

George H. Baker is located at Long Branch, N. J., and enjoys a practice among the "ocean swells," at least I have his word for it. He writes me under date of April 3, '96: "Have just received a postal from Prof. Tucker, will bring it with me when I come to Albany to see if he can read it."

Joseph E. Baynes is located in Troy, at 2419 Fifth avenue. Have received no letter from him, but hear from friends of his, that he is doing well.

A. L. Brown has a good practice at Cornwall-on-Hudson. He promised to send me a printed slip concerning himself, but it must have miscarried in the mail, for I never received it.

Arthur T. Capron is located in Albany, at 78 Hudson avenue. He has a good practice and has saved some money. In 1895 he married and is well and happy.

James A. Clyne is in Joliet, Ill., and is doing nicely; he writes me the following letter: "After leaving school at Albany, I remained at home a few month, having several places to locate in view. Finally, deciding to take Horace Greeley's advice, I came west in the summer of '86. There was then a population here of twenty thousand and about thirty doctors. I put out my shingle and sat down to wait for patients, which were a long time coming, and many times I was on the verge of going back east, but the words of Dr. Vander Veer at his last lecture to our class, "Wherever you go, stick and success will come," gave me some encouragement and assurance that I would win some day and now circumstances prove that he was right. At the end of my second year here, I was appointed surgeon to the Chicago and Alton rail road, which position I still hold. In the autumn of '91 I was married, and since that day, as though my wife were a mascot, nothing but good luck has come to us. In 1893 I was appointed health commissioner, for two years, at a salary of one thousand dollars a year. I often think of Albany and would like to see the old school again and only hope I can be with you at the reunion." He signs himself with best wishes for the members of the class of '86.

James Carr is located in New York City, at No. 36 Platt street.

John A. Cutter is practicing in New York City, he writes: "I am with my father, Ephraim Cutter, handling mainly chronic cases—consumption, Bright's, diabetes, rheumatism, arthritis deformans, tic douloureux, neurasthenia in men and women, locomotor ataxia, tumor, cancer, etc. Was six months in Kentucky on a large stock farm, with some special cases. Had charge in 1887-88, of a dispensary of the medical missionary society, working amongst the very poor; believe there are too many hospitals and dispensaries; they should be managed by the state; the medical and surgical service under the same plan as the corps of the army and navy. Institutional charity, whether by hospital or dispensary, is largely a fraud on the profession. I use the microscope daily in the practice of medicine, as it enables diagnosis of pre-tuberculosis, pre-rheumatism, pre-apoplexy, pre-Bright's, pre-embolism; it is, with the aid of chemistry, invaluable in the management of chronic cases and should be used more with the acutely sick; it does not do away with other clinical evidence, but is an aid and supplement. Albany is the best college because of its teaching force; I would that it might be endowed under the following conditions:

"1. A six years course, leading to degrees B. Sc. and M. D.

"2. Nine months instruction yearly.

"3. Students attend medical and surgical clinics from the commencement of their six years' course.

"4. Studies of the first two years, anatomy, botany, chemistry, physics and elementary Latin and Greek, to learn the principles of origin of the words. Let the regular medical course commence the third year; in the last, the sixth, have more attention paid to the art of medicine; these are days of laboratory dogma; such dogma are worth nothing without the backing of clinical evidence. All teachers in the college should have practiced medicine at least ten years and have shown their ability to earn a livelihood thereby. A present great evil in medical teaching, is the use of young men who are loaded with theory, but little practice; it is one thing to talk medicine—another to practice it. Limit the number of students. Harvard and Yale are to-day cramped by the immense numbers of students, but Albany graduating forty men a year, does better work,

"God bless our Alma Mater."

Elmer Finch writes: "After graduating, I was assistant to Dr. O. F. Cobb of West Troy, my health failing, I returned home in the spring of '87; regaining my health, went to New York as a prescribing physician in a drug store; came back to Schodack Centre in '88, in which place I have gained a fair practice."

John F. Fitzgerald, after graduating, entered St. Peter's Hospital and served one and one-half years and then settled in Binghamton, N. Y.

Herman C. Gordinier has a large practice in Troy, N. Y.

A. H. Hoadley writes: "I expect to come to Albany for the reunion of our class; am anticipating a pleasant time. I don't remember that I have seen one of our class since

coming to Northampton, eight years ago. Probably my experience has been much like many of the other boys. After serving my eighteen months at the Albany Hospital I came directly to Northampton, a small city of seventeen thousand inhabitants—one of the prettiest places in Massachusetts—and proceeded to sit down and wait. The cool waters of the Connecticut looked very inviting for the first two years, but “Everything comes to him who waits,” and a good business, with a wife and eight months’ old boy make me fairly contented.

J. A. Holley has a large practice in Walton, N. Y. He writes that the “world has used him well and that he is as happy as mortal man can be.”

Dayton L. Kathan is practicing in Schenectady, N. Y.

A. V. Klock has a large ride at Ames, Montgomery Co., N. Y.

H. M. Lincoln is located at Wilton, N. Y. (Saratoga Co).

Charles B. Mallery writes from Corinth, N. Y.: “Have hoped to be present at the tenth anniversary of our graduating. I can only say I have done my share of work for the past ten years; some was good and some bad. Am trying to profit by the lessons taught by the cases classed as bad; and hope, if I live, to make eventually an ordinary country doctor. Greeting and best wishes to the old Alma Mater and the boys of ’86. Success attend every effort, long life and a good bank account for each one, is my wish.”

Richard H. McCarty informs me that he practiced in Schuylerville, N. Y., for six years. Had a large practice, but made little money. Was married the first year out of college, but was unfortunate enough to lose his wife three years ago. Was coroner for Saratoga county for seven years. One year ago he moved to Saratoga Springs, where he has every reason to be contented.

Francis B. McIntosh is located in Troy, N. Y.

William McNaughton practices in West Troy, N. Y.

Joseph S. Parent is practicing in Saratoga Co., N. Y.

Ransom J. Perry went to Key West, Florida, where he is now practicing.

James H. Reilly located in Rutland, Vt.

J. Wesley Sheffield practices in Sydney, Delaware Co., N. Y.

W. G. Steele writes from Mongaup Valley: “I commenced here March 15, 1886. Have a large practice among a class of poor people. Bought a property and built a drug store and dispensing office. Am married and have two children. My son’s name is Edson Hun Steele, in which you will recognize my esteem for one of our worthy professors.”

Adrian P. Van Deinse has a good practice at Sayville, Long Island.

Stephen H. Webster spent one year after graduating studying in New York. The year 1889 he spent in Europe. He is now married and practicing in Troy, N. Y.

William M. White writes from Amsterdam, N. Y.: “I engaged in practice in this, my native place, in the fall after my graduation, and have been located here ever since. At first business was slow, but, on the death of my father in 1890, I came into his practice and have been fairly successful since. I have been President, secretary and treasurer of the of Montgomery Co. Homœopathic Society and a permanent member of the New York State Homœopathic-Medical Society and one of its Board of Censors this year. Am one of the staff of the Amsterdam City Hospital, am also attending physician to the Children’s Home of this city. I live in peace and good fellowship with all my professional brethren, in spite of my fall from grace.”

William H. De LaMater is practicing in Minaville, N. Y.

Robert A. Woodruff has a good practice at Philmont, N. Y.

As for your humble servant, I remained for two years with Dr. Swinburne after graduating. Then I opened an office of my own in Albany, where I am still practicing. Have always been able to make a living. Have all the necessities of life and a few of the luxuries—among the luxuries a wife and three boys. With best wishes to you all, I am

Yours truly,

W. P. BRIERLEY,

The recording secretary read the following:

NECROLOGY.

- Dr. Erasmus D. Jones ('41), at Albany, August 17, 1895, aet. 77.
 Dr. Edward Duffey ('42), at Albany, August 24, 1895, aet. 77.
 Dr. Felix Weidman ('47), at Chesterville, N. Y., September 10, 1895, aet. 70.
 Dr. Matthew H. Burton ('53), at Troy, N. Y., April 28, 1895, aet. 62.
 Dr. Solomon Van Etten, ('55), at Port Jervis, N. Y., July 7, 1894, aet. 65.
 Dr. Adam H. Cochrane ('57), at San Jose, Cal., April 8, 1895, aet. 61.
 Dr. William S. Layman ('57), at Schoharie, N. Y., September 4, 1895.
 Dr. Elon J. Lawton ('58), at Rome, N. Y., April 18, 1895, aet. 59.
 Dr. Thomas Beckett ('61), at Albany, January 8, 1896.
 Dr. Hiram R. Field ('62), at Port Henry, N. Y., June 13, 1895, aet. 61.
 Dr. E. D. Chipman ('63), at Saugerties, N. Y., May 24, 1895.
 Dr. Dwight M. Lee ('64), at Oxford, N. Y., October 5, 1895.
 Dr. Edwin Haines ('67), at Preston Hollow, N. Y., March 19, 1896, aet. 52.
 Dr. Harry M. Burtch ('82), at Salisbury, Ct., February 12, 1896, aet. 36.
 Dr. Franklin E. Deuerlein ('91), at Corning, N. Y., September 13, 1895.
 Dr. William A. Liddle ('92), at Amsterdam, N. Y., August 1, 1895, aet. 28.
 Dr. Franklin Townsend, Jr., (hon.), at Albany, October 31, 1895, aet. 41.

The committee appointed to nominate officers presented the following report which was read by its Secretary, Dr. Babcock:

For President,

Dr. WILLIAM HAILES ('70), Albany, N. Y.

For Vice-Presidents,

- Dr. ISRAEL I. BUCKBEE ('41), Fonda, N. Y.
 Dr. JAMES F. BARKER ('77), Albany, N. Y.
 Dr. JAMES H. MITCHELL ('81), Cohoes, N. Y.
 Dr. JAMES A. HOLLEY ('86), Walton, N. Y.
 Dr. JOHN JONES ('93), Middle Granville, N. Y.

For Recording Secretary,

Dr. WILLIS G. TUCKER, ('70), Albany, N. Y.

For Corresponding Secretary,

Dr. JOHN. BEN STONEHOUSE ('71), Albany, N. Y.

For Treasurer,

Dr. THEODORE F. C. VAN ALLEN ('83), Albany, N. Y.

For Historian,

Mr. CHARLES E. DAVIS ('91), Albany, N. Y.

For Members of Executive Committee (term three years),

- Dr. ALBERT VANDER VEER ('62), Albany, N. Y.
 Dr. WILLIAM H. HAPPEL ('90), Albany, N. Y.
 Dr. WILLIAM G. LEWI ('92), Albany, N. Y.
 Dr. JOHN B. WASHBURNE ('82), Delmar, N. Y.

On motion of Dr. Perkins the report was accepted and adopted, and the recording secretary was instructed to cast a ballot on behalf of the association for the gentlemen named therein. This having been done, those named in the report were declared by the president duly elected officers of the association for their respective terms.

Dr. I. I. Buckbee, of the class of '41, the oldest graduate present, was introduced by Dr. Vander Veer and made a few remarks, referring briefly to his long practice extending over a period of fifty-five years and pledging to the association his continued interest and support.

The corresponding secretary, Dr. J. B. Stonehouse, read letters from the following members of the association unable to be present: Dr. R. S. McMurdy ('46), E. P. Howe ('57), L. H. Hammond ('58), W. M. Flemming ('62), G. S. Hulette ('67), C. M. Woodward ('67), F. H. Benedict ('68), W. C. Spalding ('81), W. W. Scofield ('82), G. H. Baker ('86), A. D. Stowitts ('86), and presented a list of those who had responded to the notice of the meeting. He also read letters from the following expressing regret at their inability to be present at the Alumni dinner: Governor Morton, Hon. W. L. Brown, Hon. F. A. Robbins, Hon. J. M. O'Grady, Hon. St. Clair Mc Kelway, Hon. W. L. Learned, Hon. S. W. Rosendale, Chancellor Upson, Secretary Dewey, Dr. B. T. Smelzer, President W. J. Milne, M. W. Bender, Esq., and others. He also acknowledged the receipt of photographs from the following alumni: Drs. W. G. Davis ('41), R. S. McMurdy ('46), J. N. Arnold ('62), H. C. Van Zandt ('65), F. H. Benedict ('68), T. Featherstonhaugh ('77), W. P. Mason ('81), W. L. Schutter ('83).

After the announcement of the order of exercises for the afternoon and evening, no other business appearing, the meeting adjourned.

COMMENCEMENT EXERCISES.

The sixty-fifth annual commencement exercises of the Albany Medical College were held at Harmanus Bleecker Hall, on Tuesday afternoon, April 14, 1896, at three o'clock, in the presence of a large audience. Dr. A. V. V. Raymond, president of Union University, presided, and upon the stage were seated the members of the faculty, officers of the Alumni association and prominent citizens. The following was the order of exercises:

Overture—"Amaryllis," - - - - - *Eilenberg*

Prayer—REV. W. F. WHITAKER.

Music—SELECTION: "Jacinta," - - - - - *Robyns*

Essay—JESSE MELVILLE WHITE SCOTT.

Music—MORCEAU: "The Nightingale and Frogs," - - - - - *Eilenberg*

CONFERRING DEGREES.

By ANDREW VAN VRANKEN RAYMOND, D. D., LL. D.,
President of Union University.

Music—PIECE CARACTERISTIQUE: "The Darkies' Jamboree," - - - *Puerner*

Address—REV. WALTON W. BATTERSHALL, D. D.

Music—INTERMEZZO: “The Three Graces,” - - - - - Herman

Valedictory—FREDERICK TIMOTHY CLARK.

Music—MARCH: “The Gladiator,” - - - - - Sousa

REPORT ON PRIZES AND APPOINTMENTS.

BENEDICTION.

Music—WALTZ: “Newport,” - - - - - Tobani

The graduating class was as follows:

SANFORD BASSLER,	- - - - -	Berne, N. Y.
ALBERT C. BAXTER,	- - - - -	Parish, N. Y.
JULIUS WARREN BLAKELY,	- - - - -	Milford, N. Y.
WILLIAM IRVING BRANDOW,	- - - - -	Albany, N. Y.
JOHN PRESTON CARVER,	- - - - -	Northampton, Mass.
FREDERICK TIMOTHY CLARK,	- - - - -	Westfield, Mass.
WALTER MILTON CLARK,	- - - - -	Adams, N. Y.
EDWARD JAMES COLLIER, A. B.,	- - - - -	Kinderhook, N. Y.
JOHN JAMES DEVER,	- - - - -	Fort Edward, N. Y.
FREDERICK BURR DEZELL,	- - - - -	Treadwell, N. Y.
RUDOLPH FRANCIS DIEDLING,	- - - - -	Catskill, N. Y.
HARRY OGDEN FAIRWEATHER,	- - - - -	Troy, N. Y.
ARTHUR EZRA FALKENBURY,	- - - - -	Albany, N. Y.
HENRY FIELD,	- - - - -	Cold Brook, N. Y.
LELAND LE GRAND FILLMORE,	- - - - -	Bennington, Vt.
JOHN C. FUSMER,	- - - - -	Palatine Bridge, N. Y.
EDWARD GILLESPIE,	- - - - -	Schenectady, N. Y.
GEORGE BERNARD GRADY, Ph. G.,	- - - - -	Green Island, N. Y.
IRA DANIEL HASBROUCK,	- - - - -	Wallkill, N. Y.
FRANK AUGUSTINE HENNESSY, Ph. G.,	- - - - -	Albany, N. Y.
ERVING HOLLEY,	- - - - -	Walton, N. Y.
JOHN WESLEY JENNINGS,	- - - - -	Lassellsville, N. Y.
GARRETT VANDER VEER JOHNSON,	- - - - -	Schenectady, N. Y.
HENRY WARD KEATOR, M. D.,	- - - - -	Griffins Corners, N. Y.
FRANK ARTHUR KELLER, A. B.,	- - - - -	Fort Plain, N. Y.
FRANK BALDWIN MAYNARD,	- - - - -	Sandy Hill, N. Y.
JAMES THOMAS MCKENNA, A. M.,	- - - - -	Troy, N. Y.
FRANK MCLEAN, Ph. G.,	- - - - -	Binghamton, N. Y.
AMASA PARKER MUIR,	- - - - -	Albany, N. Y.
PARKER HERBERT MURPHY,	- - - - -	Albany, N. Y.
FRANCIS PATRICK O'BRIEN,	- - - - -	Fort Edward, N. Y.
ELBERT ALONZO PALMER,	- - - - -	Coeymans, N. Y.
EDWARD JAMES PARISH,	- - - - -	Maryland, N. Y.
FRANCIS XAVIER PIDGEON,	- - - - -	Oswego, N. Y.
ALBERT HUSTED RODGERS, A. B.,	- - - - -	Albany, N. Y.
THOMAS AVERY ROGERS,	- - - - -	Vergennes, Vt.
WALDO HENRY SANFORD,	- - - - -	Albany, N. Y.
WILL HENRY SCHWARTZ,	- - - - -	Pillar Point, N. Y.
JESSE MELVILLE WHITE SCOTT,	- - - - -	Albany, N. Y.
JAMES CHARLES SHARKEY,	- - - - -	Chatham, N. Y.
HENRY LARNED KEITH SHAW,	- - - - -	Watertown, N. Y.
EDWARD GOODSSELL STOUT,	- - - - -	Troy, N. Y.
ROSCOE JOHN TAYLOR,	- - - - -	Mexico, N. Y.
BURTON VAN ZANDT, A. B.,	- - - - -	Schenectady, N. Y.
JOHN DAVID VEDDER,	- - - - -	Albany, N. Y.
JOSEPH EDWARD VIGEANT,	- - - - -	South Lee, Mass.
EDWARD JOHN WIENCKE,	- - - - -	Schenectady, N. Y.
THOMAS GOLDSMITH WRIGHT,	- - - - -	Troy, N. Y.
JEROME EDWARD YOUNG,	- - - - -	Lansingburgh, N. Y.
PHILIP SAMUEL YOUNG,	- - - - -	Reidsville, N. Y.

The registrar presented the prizes. He first read a report on the Vanderpoel prize endowed by Mrs. Gertrude W. Vanderpoel, in memory of her husband, the late S. Oakley Vanderpoel, M. D., for many years a professor in the college, stating this prize, consisting of a microscope and accessories, valued at eighty dollars, offered to the senior student passing the best bedside examination in general medicine, had been awarded to Dr. Frederick T. Clark; and that at the competitive examination for hospital positions, the following appointments had been made: Albany hospital, Drs. Frederick T. Clark, L. L. Fillmore and J. M. W. Scott; St. Peter's hospital, Drs. H. L. K. Shaw and W. H. Sanford, the same being arranged in the order of excellence of their examinations. Ellis hospital Schenectady, Dr. E. J. Wiencke.

The prize of fifty dollars offered by Dr. Vander Veer, for the best report of the surgical clinics, was awarded to Dr. John D. Vedder.

The prize consisting of an ophthalmoscope, offered by Dr. Merrill, for the best report of the eye and ear clinics, was awarded to Dr. Amasa P. Muir.

The Townsend physiological prize, endowed by the late Professor Franklin Townsend, Jr., M. D., and presented this year by Mrs. Townsend, in memory of her husband and in advance of the settlement of his estate, was awarded to Mr. Alvah H. Traver, for passing the best examination in physiology at the end of his first year of study.

Dr. Boyd's prize to the student passing the best final examination in obstetrics, was awarded to Dr. J. M. W. Scott.

The prize consisting of a case of surgical instruments, offered to the senior student passing the best final examination, by Dr. T. W. Nellis, was awarded to Dr. J. M. W. Scott.

The prize offered by Dr. H. R. Powell, to the second year student passing the best final examination, consisting of a general operating case, was awarded to Mr. Francis J. McKown.

A prize consisting of Gross' complete pocket case of instruments, offered by A. B. Husted & Co., to the first year student passing the best final examination, was awarded to Mr. Alvah H. Traver.

THE ALUMNI DINNER.

The twenty-third annual dinner of the Alumni Association was held at the "Kenmore" on Tuesday evening, April 14, 1896, at half-past eight o'clock. About one hundred and fifty were present, including members of the association, their guests and members of the graduating class. The *Menu* was as follows:

Little Neck Clams.		
Cream of Asparagus aux Croutons Souffle.		
Canape Lorenzo.		
Queen Olives.		Radishes.
Turban of Striped Bass, a la Joinville.		
Sliced Cucumbers.		Pommes Noisette.
Spring Lamb, New Mint Sauce.		
New String Beans.		Bermuda Potatoes, Boiled.
Escalope of Chicken en Caisse, a la Montpensier.		
Punch aux Marichino.		
Golden Plover aux Cresson.		
Lettuce and Tomato, French Dressing.		
Neapolitan Cream.		Strawberry Short Cake.
Fancy Assorted Cake.		
Fruit.		
Fromage.		Water Crackers.
Cafe Noir.		

After the tables had been cleared, cigars passed, and the "Alumni Ode" sung, the following toasts were responded to, Dr. Albert Vander Veer acting as toastmaster:

1. "Our Alumni Association," Dr. Theobald Smith. ('83).
 2. "Our Veterans," Col. Albert D. Shaw.
 3. "The Faculty," Professor S. R. Morrow, M. D.
 4. "The Orator of the Day," Rev. W. W. Battershall, D. D.
 5. "Reminiscences," Prof. H. D. Didama, M. D., LL. D. ('46).
 6. "The Legislature," Hon. William E. Johnson, M. D. ('59).
 7. "Army Surgery," Col. Archie E. Baxter.
- The Triangle song was then sung.
8. "The Clergy," Rev. D. O. Mears.
 9. "The Expert Witness," Judge Griffith.
 10. "The Legal Profession," George Lawyer, Esq.
 11. "Our President-elect," Dr. William Hailes.
 12. "The Class of '96," Dr. J. W. Blakely.

The class poem was then read by Dr. R. F. Diedling and after the "Parting Ode" had been sung to the tune of "Auld Lang Syne," the toastmaster in a few remarks declared the reunion of '96 at an end.

Guaiacol In Tuberculosis. — In Dr. A. Jaccobi's new work on the Therapeutics of Infancy and Childhood he says: "No one treatment of all forms of tuberculosis ever satisfied me to the same degree as has that of guaiacol. If the taste be objectionable, the carbonate of guaiacol, an almost tasteless powder, may be substituted in three or four daily doses of one to three or four grains each. Both of these preparations, particularly the latter (guaiacol carbonate), may be combined with other drugs according to indications." — *Medical Record*.

Organic Extracts.—Dr. Frederick Coggshall, in a paper read before the clinical section of the Suffolk District Medical Society, October 16, 1895, entitled “A Clinical Test of Some of the So-called Organic Extracts, Cerebro-Ovarine, Cardeine and Testine,” concludes that these organic extracts are physiologically and therapeutically worthless.—*Boston Medical and Surgical Journal*.

The Treatment of Lumbago. M. Albert Robin mentions the various local applications with friction which have been used from time immemorial, revulsives, counter-irritants, and wet cups. Of the applications, massage of the joints, electricity, particularly for the secondary muscular atrophy, and methylchloride for the acute stage, are especially mentioned. For the internal treatment jaborandi is most strongly recommended. As contra-indications to its use should be cited disturbances in the cardiac rhythm, and it should be omitted if epistaxis or the quantity of urine does not reach the normal amount after diaphoresis. The method of preparation is as follows: Sixty grains of the leaves are macerated for twelve to twenty-four hours in two and one-half drachms of alcohol. Upon this mixture is poured one and one-half ounces of boiling water, which is infused for twenty-four minutes and then filtered. The filtrate is taken hot, as it is prepared, in the morning, fasting. During the perspiration the patient should avoid swallowing the saliva, which may give rise to nausea or even to vomiting and for the thirst he should drink only a small quantity of warm liquids, diluted coffee, in order to avoid the vomiting which follows the immoderate ingestion of cold liquids or the swallowing of a certain quantity of saliva. There are instances when a single dose of the remedy will cure the disease. In case it is necessary to repeat the treatment, it is well to have a day of intermission between the doses. The patient should be kept warm, confined to his room or even in bed. In case that this remedy is contra-indicated, sodium glycerophosphate, five to seven grains hypodermatically can be substituted. In certain cases when the articulations are affected sodium salicylate may be used, but it is not so valuable as is jaborandi.—*Bulletin General De Therapeutique ; Amer-Jour-Med-Sciences*.

Three Kansas City Medical Colleges Outlawed.—Three medical colleges in Kansas City have refused to comply with the requirements of the Missouri State Board of Health, and have consequently been stricken from the list of colleges in good standing; which implies that their diplomas will not be recognized by the State Board of Health and that their students will be refused licenses to practice medicine in the state of Missouri.—*Medical Record*.

THE Albany : Medical : Annals

REPRESENTING THE

Alumni Association of the Albany Medical College.

HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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No. 5.

ANNOTATIONS.

Orificial Surgery in Germany.—The Centralblatt for Innere Medicin thus scarifies that absurd reflex “philosophy,” which has found expression in “orificial surgery.” How a cough is cured in Kansas may be of interest to all, even if the cure be not imitated. The writer of this paper, while passing his vacation at Manitou, the Mecca of America, was consulted by a vigorous, blue-eyed, light-haired Swedish girl of twenty-six summers on account of a cough and various nervous disturbances. The cure was as follows: First, the lady must reside in the same house with the physician. Then came phosphate of iron, chloride of potash, galvanization of the body, faradization and dilatation of the rectum (*Northwest Lancet*). Then followed galvanization of the solar plexus and of both vagi, nasal sprays, verbascum oil in the ears, and finally excision of the hymen and further dilatations and faradizations as already described, together with regulation of the diet and inhalations of oxygen, and the cure burst in upon this treatment like an avalanche in the mountains of the moon or an earthquake in the Sierra Nevada. A poem by an unnamed writer closes this medical history.—*Medical Standard*.

Abdominal Massage to Relieve Habitual Constipation.—Dr. Kummerling uses the following process of massage for the purpose which is far more efficient than the usual process. Massage lasting fifteen minutes, well done, is sure to produce an easy and abundant evacuation. The patient is placed on his right side and the operator picks up with his thumb and index finger of each hand the skin and the subcutaneous tissue at the level of the iliac spine. This makes the intestine directly accessible to the other fingers, and he manipulates it with them, always from above downward, and with the ends of his fingers, for five minutes. Then the patient is turned on his left side and the

process is repeated on the cecum and the ascending colon, only in the opposite direction, from below upward. This leaves only the small intestine and the transverse colon to be massaged, for which the patient is placed in the decubitus genusectoral position. This relaxes the abdominal walls and brings the intestines closer into the hand of the operator.—*The Journal of the American Medical Association*.

The Originator of the Quinine Industry.—*The Agricultural Gazette*, of New South Wales, states that there is still living at Kenmore, in excellent health, Mr. Charles Ledger, the man who, forty years ago, after most perilous adventures, introduced the variety of cinchona calisaya known as ledgeriana into the island of Java. Messrs. Howard & Sons, the great quinine firm, say that the supply of Peruvian bark from Java is almost all from the ledgeriana trees, the only complaint against this variety being that it has turned out so rich that the trees are supplying too much quinine for the world to consume. Perhaps the quantity of bark which is now produced every year from seed furnished by Mr. Ledger cannot be short of ten million pounds, and to him more than any one else, perhaps, is due the fact that quinine has been brought within the means of the very poorest.—*Medical Record*.

The Coroners Bill.—The so-called coroners bill, in the form in which it has been reported from the assembly judiciary committee, bears so little resemblance to the changes desired by the New York State Medical Society as scarcely to be recognizable by its friends. Of all the reforms discussed before the committee only one has been agreed upon, the abolition of the coroner's jury.

The coroner himself is to stay. For this he is chiefly indebted to his own consequence as a political factor in many parts of the state. The pressure brought to bear upon legislators by coroners and their friends was something tremendous. Objections, real or fanciful, were presented to all proposed changes in the existing system. Those who argued that the system of a medico-legal officer had worked well in Massachusetts, were reminded that Massachusetts ideas transplanted to New York have not usually been found to adapt themselves well to the changed conditions. The objection which apparently was given most weight was that the extraordinary powers vested in Supreme Court judges, of appointment of the new officials and the fixing of their salaries, and in the power of removal would tend to create a tremendous political machine. To the friends of the abolition of the coroner it may seem somewhat whimsical that this objection was raised in a legislature which is itself the embodiment and expression of machine politics in its highest development, and which has just passed the Raines bill.

As a substitute it was suggested that a state commission be devised in which should be vested the appointment of the medico-legal officers to take the place of coroners. Objection to this was made that the people have already quite all the state commissions they desire, and could readily be induced to spare some they now have. This objection came also from men who had voted to create the state excise commission with its exaggerated and enormous powers diverted from the usual channels of popular control.

Chairman Robbins, of the judiciary committee, tried to secure the small concession that coroners should be practical medical men. Even this poor compromise could not be had. Finally, to get rid of the pressure and be done with the bill, it has been reported out in the present inconsequential shape. It may be some small gain to do away with the expense of coroners' juries, but it is as likely that the bill as it stands will fail of passage as that it will go through. The advocates of abolition of the office of coroner are not likely to make much effort for the passage of the bill as it now stands.

It is perhaps unfortunate for the medical profession, which was chiefly back of a demand for abolition of the coroner, that there should be at the same time pending before the judiciary committee a bill making the accounts of doctors a preferred claim against estates. This created an unfavorable impression undoubtedly. The coroner is saved for at least another year.—*The Argus*.

Conclusions of New Orleans Antiphthisin Commission.—In November, 1895, the Parish Medical Society of New Orleans, La., appointed a commission for the investigation and a public test of antiphthisin as to its value in tuberculosis, to be made in the Charity Hospital of New Orleans, the commission consisting of the following members: Dr. Edmond Souchon, President; Dr. A. J. Bloch, Secretary; Dr. J. D. Bloom, House Physician of Charity Hospital; Prof. John B. Elliott, Prof. R. Matas, Prof. F. W. Parham, Dr. F. Loeber, Dr. Charles Chassaignac, Dr. John H. Bemis, Dr. Joseph Holt, Dr. H. L. Lewis, Dr. P. E. Archinard, Dr. O. L. Pothier, Dr. A. McShane, Dr. C. J. Landfried.

The treatment of cases began November 27th, and its final report was presented to the Parish Medical Society at its regular meeting, March 28th, 1896. The report is voluminous and will be published in full. The following are the conclusions arrived at:

IN SURGICAL CASES.—A consideration of the three improved cases would certainly lead us to believe that antiphthisin has decided value, and we should commend its careful, tentative employment in such

cases in conjunction with general measures, and the usual, appropriate surgical operative treatment. The glandular case we consider especially encouraging. This case would seem to have required a most serious operation for the removal of the glands, with great uncertainty of ultimate benefit. The improvement under antiphthisin treatment would alone justify us in ascertaining that we have in this remedy a most valuable aid in the management of such cases. We beg to call attention in this connection to the case of Dr. Ambler, of Ohio, reported recently in the New York Medical Record, as confirmatory evidence of the value of antiphthisin in glandular tuberculosis. The hypodermic employment of the remedy would seem to be especially advantageous, if administered under careful aseptic precautions.

IN MEDICAL CASES.—1. In nearly every case the area of lung involved decreased, if it did not clear up entirely.

2. Auscultation bore out the results of percussion, vesicular respiration replacing to a greater or less degree morbid breath-sounds. In those cases which were classed as cured, the departure from health being only such as is due to the results of every continued pneumonic process.

3. Secretion was diminished even in the cases marked only improved, and entirely absent in others.

4. Bacteriological reports in most of the cases bore out the results obtained in physical and other examinations.

5. The general condition of the patients improved in the large majority of cases, even in those whose physical examination did not show any great improvement.

6. The use of the remedy was not attended with any danger to the patient.

7. Finally, antiphthisin does seem to have *curative* and not simply palliative qualities.

The Culture Tube In Diagnosis of Diphtheria.—We notice that some of the contemporaries are speaking contemptuously of the culture tube as a method of diagnosis of diphtheria, and some of the more foolish are intimating that we will soon do away with microbes and go back to the good old style. It is true that some modifications have been made in the method by which the bacteriological diagnosis of diphtheria is made, but the value of the method is none the less

great. It is now, we believe, conceded that if the cultures obtained from the throats which are supposed to have diphtheria contain no bacillus either identical with or resembling that of the Klebs-Loeffler bacillus, the case is not one of diphtheria. If, however, these organisms are found, it is not possible to make a diagnosis at once of diphtheria, without inoculations, for there is a non-virulent bacillus which in all respect resembles morphologically the true bacillus. If however, in connection with this bacillus there are clinical symptoms of diphtheria, then the diagnosis is practically certain. Thus, the bacteriological methods have both a positive and a negative value that is extremely great. — *Medical Record*.

“The Ownership of the Prescription has been settled by law in New York, Massachusetts and a few other states. They all give the prescription to the druggist. Some time ago a judge of a court in Berlin, Germany, gave a similar decision. The text of the decision from the judge of the Supreme Court of one of our states is as follows: The question before the court seems to be very simple, indeed. A patient applies to a physician and receives from him certain advice, for which he tenders a fee. The physician hands a piece of paper to the patient, purporting to be a written order for certain goods called drugs, which order is filled by a merchant or apothecary. The payment of the fee and the delivery of the goods or drugs terminates the verbal contract, and the druggist keeps the prescription as an evidence that the contract has been fulfilled, as far as he is concerned. The druggist can, if he so please, on his own responsibility, renew the drugs, for he is but a merchant, and has a perfect right to sell drugs to any one and in any shape. He need not keep the prescription, nor is he bound to give a copy, but should error occur, he has no protection in case of suit.”

Constipation In Women — Holmes says a very frequent cause of disease in women is constipation. It is remarkable how careless many women are in this respect. The mother should educate the girl from infancy that it is just as important to keep her bowels open as to sleep and eat. We find girls frequently going from three to five days, in some instances longer, without a movement from the bowels. Not only do they have from this a poisoning of the system from absorption of the liquid and gaseous contents of the bowels, the ptomaines or poisons developed in them from fermentation, producing extremely depressing effects on the nervous system, with great derangement of the stomach and assimilative organs, as shown in pale faces, debility, neuralgia, headache, and a general feeling of exhaustion; but we get in addi-

tion, from impacted fæces in the rectum, uterine displacement, with its consequent disturbances in the pelvic circulation and with its general reflex neuroses. It is a well known fact to gynecologists that the left ovary is oftener diseased than the right one. The left ovarian vein has no valve, and a slight pressure upon it prevents it emptying. Doubtless the pressure of a loaded rectum in this event is a prolific cause of disease of the ovary, especially the left. — *Southern Medical Journal*.

Phenacetin Poisoning.—Dr. G. Kronig reports a fatal case. For occipital headache a seventeen-year-old printer's assistant received five fifteen-grain phenacetin powders, not more than two to be used in a day. After an evening dose vomiting commenced, then we noticed great weakness and a bluish-gray coloration of face and lips. The temperature was 102.2 degrees F., the pupils were of medium size, the pulse weak, and the patient complained of headache, vomiting and diarrhœa. The urine was of a chocolate color, the conjunctivæ slightly jaundiced. General icterus followed and cyanosis of lips, hands and feet. Urine obtained by catheter was thick, dark reddish brown in color, containing masses of almost pure blood. Death followed two days after the ingestion of the remedy. As the patient was septic from a purulent otitis, a necropsy was necessary to show that death was due to the drug. The diagnosis reached by this means was stated as universal methæmoglobinæmia.—*Berlin Klinische Wochenschrift*.

Doctors Should Not be so Modest.—I know that there is a general feeling among physicians of the better sort that conspicuous interest in public affairs may be misconstrued and looked upon as in some sort a means of professional advertisement. And one cannot choose but to appreciate and admire the sensitiveness, and high sense of honor of which this sentiment is born. But, after all, there are greater misfortunes in life than being misunderstood, and I think that the fine feeling which leads the physician so often to waive the privileges of social and public life in the interest of what he conceives to be professional ethics is capable of a richer fruitage yet, in the defiance of misconception, when impelled to whatever performance of public duty he can justify to himself.—*Medical Record*.

Personal.

Dr. H. R. Powell (A. M. C. '82) of Poughkeepsie has been elected a member of the city board of education.

REVIEWS AND BOOK NOTICES.

Transactions of the First Pan-American Medical Congress.

HELD IN THE CITY OF WASHINGTON, D. C., U. S. A., SEPTEMBER 5, 6, 7 AND 8, A. D. 1893.—IN TWO VOLUMES—WASHINGTON, GOVERNMENT PRINTING OFFICE, 1895.

The conception, the organization, the immense amount of work required, we will all remember, was largely done by the indefatigable secretary, Dr. Chas. A. L. Reed of Cincinnati, Ohio. Probably no one in this country has ever bestowed so much labor upon any one plan or scheme as was done by Dr. Reed in the completion of this Congress, from the time of his making his first suggestion to the American Medical Association until its finish. It was a stupendous undertaking, but finally completed in a most successful manner.

When in October, 1892, there was issued by the President of the United States an invitation to the various professional representative men of different kindred nations, to meet in Washington, D. C., for the purpose of establishing medicine and surgery on a higher international plane, the magnitude of the work proposed was so exceedingly great that it seemed almost a hopeless task. To bring into concise, practical form, papers and discussions that would promulgate reciprocal professional relations between the countries participating was surely a most formidable obstacle to surmount, but under the wise, untiring administration of the president, William Pepper, M. D., LL. D., Philadelphia, Pa., the material presented was arranged in such a systematic manner that the meetings were a series of educational advantages to the medical and surgical men in attendance. Sincerest praise and congratulations must be accorded Dr. Pepper for the wisdom with which he accomplished an executive burden of so widespread importance.

The papers published in the Transactions are sufficient proof of the untiring efforts of the writers, congregated in Washington from our sister countries, with a common interest to elevate and bring to the front that which was best and noblest for suffering humanity.

It would prove an almost hopeless task to review even the most prominent of these papers, for in each branch of medicine and surgery the writers and those taking an active part in the discussions, gave of their best.

The official language of the Congress was English, Spanish, Portuguese and French, and from the result of that meeting we have been brought into closer fraternal relationship with kindred countries, tending to a reciprocity of a nature free from politics.

The discussion of marine hygiene and quarantine, in particular, has led to results of special importance in their bearing upon subjects of vital international value.

If each and every young physician and surgeon could have these volumes placed in his library for reference it would be giving him educational advantages inestimable in their character. It is certain that the next meeting in 1896 will still further promulgate the noble work so auspiciously and practically begun.

READING NOTICES.

When you meet an employé of Parke, Davis & Co., whether on the road or in the house, you meet an enthusiast. He does love to expatiate on the wonderful growth of "his" firm—the number of its laboratories, branch houses, agencies, and representatives: its twenty-nine distinct lines of pharmaceutical preparations and its six thousand different products. It reminds you of John Bright waxing eloquent in the House of Commons over his favorite theme—the prosperity of the United States.

But there is good ground for his enthusiasm and for marvel at the amazing success of this firm. Recently they have opened two new branch houses to satisfy the rapidly growing demand for their preparations—one at New Orleans and another at Baltimore.

The price list which Parke, Davis & Co. are now distributing, and which suggested these reflections, is an admirable catalogue in its completeness, convenience of arrangement, and wealth of miscellaneous information. By all means write the house for a copy.

And remember, too, that the products of this firm are so many weapons for your assistance in the perpetual, harassing warfare with disease—weapons upon which you may rely through thick and thin, in emergencies as well as in routine practice. Their label on a bottle or box means that the contents have been prepared with the utmost skill and with scrupulous deference to purity and activity.

Continued compliment is paid M. Mariani for the maintained high standard and excellence of his preparations, by the numerous honorable mentions and indorsements by the members of the medical profession and those who had occasion to use his Coca preparations during the past thirty-five years.

Among the recent awards we note: Gold Medal and Silver Medal from the Académie Nationale de France; Gold Medal and a Grand Diploma of Honor from the Wine Exhibit at Bordeaux, France; Gold Medal and a Diploma of Honor at the Hygienic Exhibit at Amsterdam, Holland, and Mariani was awarded the Gold Medal and Diploma at Leamington, England, the jury surnaming "Vin Mariani" "WINE FOR ATHLETES."

Professional bicyclists and athletes, after careful trials of numerous tonic preparations, invariably give the preference to "VIN MARIANI". Messrs. Dubois, Lucas, Vigneaux, Echalié, André Henry, Imans, Buffel and many others, have attested to the vast superiority of "VIN MARIANI" over all other tonics.

In the recent long distance bicycle races in France, England and Bruxelles the winners used "VIN MARIANI", as reported in the daily press.

"Bruxelles, Aug, 28, 1895.

"I, the undersigned, André Henry, winner of the bicycle race, August 26th, Paris to Dinant, without dismounting from the wheel during thirteen hours, declare having partaken of nothing but "VIN MARIANI" to sustain my force.

"In addition will state that, after the race I felt absolutely no fatigue nor any of the usually extreme lassitude such as I have felt after the Paris-Brussels and other races, when I had not used "VIN MARIANI". For my coming Belgium races I certainly will use Mariani's marvelous tonic.

"(Signed) ANDRÉ HENRY.

Cholera Infantum.

A complaint peculiar to infantile life, too well known to need further description. I have been requested to give my treatment for this scourge of the nursery. I will not stop to give its pathology or morbid anatomy. What the profession needs is the simplest and mildest treatment that will relieve the little sufferers in the shortest time; one of which, at least, I hope to give.

The first five years I practiced, I treated these cases as I had learned to from the books and lectures. When my little patients died I wondered why they did not get well, for I knew my treatment was orthodox. When a poor, little emaciated one lingered through the summer into autumn, and finally got well, I knew it was despite both disease and treatment.

Among my patients was our own little Ruby, a bright, sweet darling of fourteen months, stricken July 2d. I exhausted the remedies laid down in the books and those in my memoranda taken down at college, then called to my assistance the ablest physicians available. They said I had done all they could do, and offered nothing new. One, a diplomat, said he had obtained the best results, in such cases,

from the use of Mrs. Winslow's Soothing Syrup, advised me to try it, and went away. In my despair, I cried out, "Is this all?" "Is this the end of all hope of assistance, in this hour of my great distress?"

July 28th she ceased to be. We laid her away, and might well have written on her little monument, whose spire points heavenward, "Died early, because they knew not what to do."

Then I began to inquire of every doctor I met: What is your treatment for cholera infantum or summer complaint in children? They replied: Opium, morphine, laudanum, paregoric, Doveri, cinnamon, cloves, allspice, nutmeg, kino, blackberry-root tea, white oak bark, raspberry leaf—the whole catalogue of astringents—made into some form of powder, decoction or syrup. The same old, old treatment that has sent, and is still sending, multiplied thousands of lovely, innocent children to premature graves, that ought to be saved; and many of them would get well if they never saw a doctor, or rather, if a doctor never saw them. Hard words to say! but I have been over the battle-grounds; I have witnessed the last struggles; I have heard the weeping of mothers and friends, who anxiously watched for the last breath.

I have paid dearly for my knowledge. I am still in a position to look over the field, read the results, and know whereof I speak. I had tested the treatments laid down in the standard works, and those given me by my teachers, and found them disastrous failures. I had applied to professional gentlemen with whom I met and some of them appeared to think that they had about reached the top round, and, from them, learned nothing new under the sun. I was then, comparatively, a young man. I determined to pull out of the rut made by that old professional cart, that went out from Philadelphia over one hundred years ago, and, if possible, blaze a way to the goal of my ambition, to relieve and save these little sufferers.

Under astringents, I found the inner coating of the stomach wrinkled and hard, like that of a chicken's gizzard; the small intestines the same, with occasional short spaces distended with gas. No digestion, absorption or assimilation could take place under such conditions. (If you will cut down here after death, gentlemen, you will find, after using your puckering treatment, a similar condition.)

I began to think for myself: There is evidence of irritation here, manifest at both ends of the line. First, by the vomiting, and second, the diarrhoea. What then are the indications?

The answer is plain. First, control the irritation, and second, remove the cause. To control vomiting, one-eighth grain tablet of

calomel every hour until four are taken. Follow with teaspoonful doses of castor oil, or pure olive oil, in which is mixed three to five drops of Battle & Co.'s Bromidia, every two hours, until it operates on bowels, and be sure that it *does operate, too*.

Then give every two or three hours from half to a teaspoonful, according to age and emergency, of the following:

R	Aquæ calcis,	-	-	-	-	1 ounce.
	Mistura cretæ,	-	-	-	-	1 ounce.
	Syrup acaciæ,	-	-	-	-	1 ounce.
	Bromidia,	-	-	-	-	½ ounce.
	Bismuth sub nit,	-	.	-	-	1 ½ drachms.

M. Sig.: Shake well before using.

Repeat the oil every morning *till it operates*, and follow it as before. If the Bromidia in this formula is not sufficient to insure quiet and sleep, I give enough of it in addition till it does, always properly diluted. In extreme bad cases, with "brain symptoms," I depend entirely on Bromidia, and it has never failed me. I have given it in half teaspoonful doses every hour till the desired effect, with no unpleasant results.

Observe proper rules of feeding and bathing and the little patient is usually all right in a few days. Since I have adopted and followed this course, now about twenty-five years, I have not lost a case of cholera infantum or summer diarrhœa, and my records will show that I have treated, probably, as many as any one in the same section of country.

I want to say here, that I have saved the lives of more children, of all ages, with Bromidia, than any other remedy I have ever used, and I have used it since it was first introduced. I would no more think of going among the little ones without a bottle of it than I would of going among the "Haw-eaters" of the Missouri Valley without a bottle of quinine. I know how many feel from what they write about so-called proprietary remedies, but "what I have written, I have written". "The proof of the pudding is in chewing the string"; chew the string, gentlemen, and then tell us what you know.

When doctors learn that medicines never cure any disease, but may only remove the cause, that the system may restore itself, then there will be a great revolution in our medical armamentarium, and the manner of using, to obtain the desired results.

J. M. DUNCAN, M. D.

Kansas City, Mo.

Medical Brief. September, 1895.

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\$1.00 A YEAR.

Physics and Ethics.

BY REV. WALTON W. BATTERSHALL, D. D.

Address Delivered at the Annual Commencement of Medical College of
Union University.

Mr. President, Members of the Graduating Class, Ladies and Gentlemen :

Thanking you for the honorable duty which you have assigned me on this annual festival of the Medical College, an institution which the city of Albany has the right to be proud of, and the duty to care for, I venture to phrase the theme to which I call your attention, “ Physics and Ethics.” With this large subject on my hands—a subject that covers an historic battle-field in the world’s intellectual life, on which some of the most brilliant names of this generation have flashed their swords and won their spurs—you have a right to expect that I will select a line of thought which is especially related to the science or practice of medicine. At the same time you will hardly expect that I, in my laic ignorance, should undertake to instruct you on the technical ethics of the distinguished profession which you represent.

We do not ignore the broad, universal bases of the moralities that make life sweet and wholesome, when we say that every profession has its own ethics. They are formulated, not to the discredit, but in the interest of the elemental moralities. Each profession must emphasize the morals necessary to its well-being. By law and penalty, it must educate and enforce the virtues which it at once imperatively demands and exposes to temptation. This is true of every vocation and institution of organized life. It has specific moralities which it trains and crowns. The medical profession has its peculiar needs and exposures. The world puts into its hands the most tremendous issues, the most priceless trusts of life. It must protect itself from the ignoramus and the charlatan and the huckster. It must preserve the

morale of the guild. The virtues which, to this end, it elects and consecrates, it hedges about with traditions with which "a stranger intermedleth not."

Happily my theme, "Physics and Ethics," opens lines of thought, which do not cut into the ethical preserves of the profession, and yet have direct bearing on the fundamental ideas and work of the profession. Taking the words "physics" and "ethics" in their largest range, we may define the one as the science of nature, the other as the science of morals.

There is no question of the relation of the physician to physics. His very name betrays him. Physician is related to physics in all the ambiguities of the word. It implies no arrogance or dissipation of power, if he claim the original meaning and the full heritage of the significant name which he bears.

The relation of the physician to ethics, at first glance, is not so apparent. But if we turn from the etymology of his name to the nature of his work, there are indications, if I mistake not, of the closest relationship. In short, I maintain that the physician, in the study of his science and the practice of his profession is, of all the world's thinkers and toilers, the most notable exponent of the ethical interpretation of nature and life. Is this true? Let us see. At all events, it is worthy of more than the swift glance we can give it on this occasion.

We hear much at the present day of the tendency of physical studies to obscure ethical conceptions. Not that the student of science is apt to be unsound regarding the practical moralities of life, or undeveloped in regard to those refinements of feeling and conduct which spring from an acute and exquisite ethical sense. In fact, the work of the scientist elicits and nurtures two of the most characteristic flowers of Christian morality—the humility which suppresses self, and the enthusiasm which immolates self. These are the two most conspicuous marks by which men, at least in this age, recognize sainthood. There are scientists of this generation who show these marks fair and large, who bring to their work in mechanical and chemical and biological laboratories a consecration as costly as that of canonized heroes and martyrs. How is it then that the impression prevails that physics and ethics are at war; that the postulates and methods of the one exclude and antagonize the postulates and methods of the other?

There are three facts which furnish explanation.

FIRST: It is urged, and I think with reason, that a large and deep view of ethics implies a spiritual conception of nature. Now science, as it is generally understood, deals only with phenomena—forces and

laws. These it can capture, cage in mathematical formula, and harness to the chariot of the world's enterprise and convenience. Beyond these lie kingdoms of truth, on whose frontiers it must halt. The fountain-head, the underflowing source of nature, God, cannot be reached by the telescope, or the scalpel or the crucible. His name, therefore, does not appear in the tabulated results of the instruments, which have plucked so many secrets from the mystic bosom of nature. St. Paul wrote many a sentence, which indicates that if he were alive to-day he would not discredit the humility and conscientiousness with which science refuses to leap beyond its limitations. He would only maintain that science is not life, that it deals only with the fringes of life, that we must look beyond the reach of its implements for the sources of life. With this point of the apostle, the architect of the Christian faith, Darwin agrees when he says: "we stand in awe before the mysteries of life"; and John Stewart Mill agrees, when he says: "Science contains nothing repugnant to the supposition that every event which takes place results from a specific volition of the presiding power"; and Herbert Spencer agrees when he says: "We are obliged to regard every phenomenon as a manifestation of some Power by which we are acted upon; and we are obliged to regard this power as omnipresent." The great apostle of agnosticism writes "Power" with a capital. If he would only change the name of his God from the "Unknownable to the "Incomprehensible", he would not only gain in precision of language. but he would range himself with St. Paul, and St. Augustine and Pascal; and the church would give him a diploma from its school of theology.

There is another fact that has its bearings on the situation. "The study of nature," says Kant, "by itself leads to no theological results." He might have added: "It leads to no ethical results." We cannot go to the physical universe for warrant or confirmation of even the ordinary moralities that the world finds necessary for its social structure. Nature in fact, is immoral, as we apply the word to our vicious and criminal classes. Mill bluntly declares, "that nearly all the things which men are hanged for or imprisoned for doing to one another, are nature's everyday performances." There is in nature a certain profound and definite morality, as I shall in a moment try to point out, but it is restricted; it gives no encouragement to the hero, or the saint, or the martyr, it provides no seed or atmosphere for those exquisite ethical forms which blossom on the higher levels of our energy.

And there is a third fact which accounts for the unsympathetic relations between physics and ethics. A man is so built that, like the

fuller's hand, he is subdued to the material in which he works. The more intense and absorbing the work, the deeper the dye that stains the brain. We are all of us intellectually lop-sided and crippled by our specific studies and professional points of view. The student of physics deals with the mechanism of the universe,—the methodic and inevitable thrust and pull of physical force. The student of ethics deals with human life, thrown into highly organized forms, where law has play, it is true, but where physical forces are crossed and modified by forces which are obscure and complex and whose impact and momentum are incalculable. The skill that unbraids the muscles of a frog's leg is of little count in dissecting the soul of a Savonarola, or tracing the influence of the Renaissance on the art and morals of Europe.

If all this be true, you ask, how then do you maintain that the physician is an exponent of the ethical idea in nature and life? My answer is rooted in the fact, that he deals, not with the mathematics, but with the vitalities of nature. Above all, he deals with the interpreting factor of nature. Man is the key that unlocks the universe. Reading into nature the attributes which nature has lodged in him, we are obliged to attribute intelligence and moral purpose to the processes of the universe. He who deals with the mystery of man works in the shadow of the mystery of God.

But this contact with human life the physician shares with others. There are, however, peculiar features of this work which serve to counterbalance the general unethical tendency of physical studies. Especially the two great features of his profession bring him close to the fundamental conceptions of ethics.

First: The science of medicine involves the study of disease. Now the history of disease is full of ethical revelations. What do I mean? Simply this. Morality, in the last analysis, consists in obedience to the laws of our being—not merely the laws that concern our physical welfare, but the laws that conserve the energy and fruition of our whole manhood.

There are ranges of law and morality with which the physician has no professional concern; though there are interactions between mind and body which no physician can ignore, and which open fields of investigation that promise large harvests to the science of the future. But all through our nature, in soul as well as physical organism, morality is obedience to law. Now what is disease? Simply the penalty of violated law. The law may have been violated ignorantly, without moral fault, or even in the interest of the higher moralities. It may have been violated by the one who suffers, or by his remote ancestor,

or by the mechanic who builds his house. All the same, the law rebounds and cuts through flesh and bone with its penalties.

The study of disease is, therefore, a study in morals—the morals that grow out of the fundamental structures and processes of life. When the philosophers and the artists talk lightly of sin, the physician can read us chapters of human history, in which we see sin working out its tragedies. He can tell us that life is not built on the tinted dreams of æsthetics, or the maxims of the market-place, or the elegancies of the drawing room. He has seen life in the squalor of garrets and cellars, in the long, dreary rows of hospital beds—life into which has flowed the taint of ancestral vices; life racked and tortured; life impoverished by disease, wasted by abuse, deformed by neglect. He is on confidential terms with nature, and he sees her at work squaring her account. He can tell us, he is bound to tell us, that the universe, so far from being the product of caprice, the plaything of chance, is thriddled through and through with laws that are exact and unerring and pitiless; that nature so far from being immoral is a veritable Mount Sinai, from which the eternal moralities are proclaimed, and of which, it is written, “the mount burned with fire.” He can tell us that the ethical laws of life are something more than conventional and arbitrary inventions, transcribed from sacred books, enacted by human legislatures, enforced by policemen and public opinion. They are born amid the elemental forces. They spring from the nature of things, and they are protected by the nature of things. They serve nature, and the forces that play along the lines of nature are their avengers. The culprit may overlook and forget them; but they do not overlook nor forget him. They follow his track; they hunt him down; they break in upon his philosophies, his defiances, his prayers. They stretch across his path their unseen arms. They smite him with their forgotten hands. They issue from the mount that burns with fire. All this the physician can tell us. Is he not an ethical interpreter of life?

But the purpose of his study is not simply the knowledge; it is the treatment of disease. It is here, above all, that the work of the physician declares its ethical relations. It is conceded that the central doctrine of morality, its purpose, its process, is the conservation of life. It chains the appetites and passions only to protect the higher interests of life. But with the advent of the religion of Christ, a new chapter was written in the history of ethics. In the world's gallery of portraiture He hung that immortal picture of the shepherd bringing from the mountains the recovered sheep with its bleeding feet and torn fleeces. Thus He pictured the morality that sits on the throne of

the universe. He said of Himself, that He "came to seek and to save that which was lost." In the love and worship that have grown about His name, the world, through the Christian centuries, has spelled out the lesson that the divinest morality is that which stretches out its hands for the rescue of life from its downward thrusts.

Now what is the trait, above all others, that the profession of medicine nurtures in, and demands from its disciples? the trait that in some physicians becomes an enthusiasm, and in all becomes a tradition and habit of thought? What shall I call it? We all recognize it. It is a quick and trained insight into the pathological conditions of our human nature. It is an impulse which, as I say, is entrenched in the traditions of the profession, and in the minds of many physicians, works with the energy and promptitude of an instinct, to save life, to save limb or organic function, to bring solace and healing to suffering humanity. When others turn with despair from some maimed and disfigured piece of human clay, some frame stretched on those engines of torture which nature has invented; then the physician, not for love of reward, with no touch, it may be, of personal affection, but from the instinct and habit which comes of his training, with a courage that never fails, and an energy that never tires, enters into battle with the disease, re-enforces the languid tides of nature, with the merciful knife removes the shattered and morbid limb, with careful, skillful breath, blows upon the flickering flame of life. No sight of horror, no emotion of disgust, no peril of contagion, no despair of success, can drive him from his post. His office, his function, the spirit and purpose of his training are to find and fight disease, to rescue the human creature that suffers, and, as long as a spark remains upon the taper of life, the physician despairs not, but labors with all the appliances of his science, to rekindle and nourish the flame.

In all this, is he not an exponent of the highest evolutions of morality? Does he not actualize and exemplify the most distinctive contribution of Christianity to the ethical ideas of the race?

"Do you know," says Balzac, "that there are three men in our social system who cannot respect or value the world—the priest, the physician and the lawyer. They wear black gowns perhaps because they mourn for all virtues and illusions."

The author of "*La Comédie Humaine*," who in the force and range of his ethical creations, of all Frenchmen, most reminds us of Shakespeare, has made a mistake, from which his larger and healthier genius would have saved his English prototype. The three great professions wear black, not because they mourn for dead virtues and

illusions, but because they represent the majestic moral forces which environ and shelter human life. They are the three priesthoods that minister to the world. You, gentlemen, go forth to the profession that is not the least sacred of the three. Its motive and its trained instinct bring it beneath the especial benediction of those hands that were pierced for the wounds of humanity. It is a grand and holy thing to serve in the ministry of rescue, to bring health and strength to maimed and tainted human life, to pour balm in the cup of the world's great agony. You are in alliance with the divine Power that flings up life from the abysses of nature, that heals its hurts, that is ever lifting it to higher ranges of energy and joy. *Noblesse oblige*. Take the largest measurements of your work. Test it by the highest ideals. Realize the worth and sanctity of your priesthood.

Pneumonia—Its Mortality and Treatment.*

BY HARRY S. PEARSE, M. D.

The diagnosis, symptomatology and treatment of the different types and stages of pneumonia, pneumonitis or lung fever, form no inconsiderable part in the work of the medical interne of the large charity hospital of to-day. Etiology, morbid anatomy and prognosis, though important factors, occupy him less. Those whom charity is called upon to succor are the ones prone to develop this disease, which is insidious, defiant, unyielding and fatal to one-fifth of its victims.

The poorly nourished, ill clad, badly housed poor, especially those beings made susceptible by rum, pick up the disease in their squalid quarters and in the gutters with deplorable ease and fatality. These conditions may account in a measure for the increased mortality of the last over the first few years of the century. We would not, however, be justified or fair in saying that they did not exist a century ago, and bearing an equal weight upon the mortality of that period. Unfortunately we cannot say that the number of cases treated annually a century ago is to the number treated annually now as the death rate then is to the death rate now. The death rate now is too great to permit the ratio. Therefore, we must supplement Dr. Delafield's statement that "Treatment has not influenced the duration or convalescence of the disease," with the one "that it has not been able to cope with the mortality."

The statistics are singularly exhaustive, doubtless because of the widespread prevalence of the disease and the important part it plays in

* Read before the Medical Society of the County of Albany, March 25, 1896.

the death rate of each hospital, municipality and country.

The following records are extremely interesting:

Place.	Cases.	Rate.
Stockholm,	12,421 (hospital),	11 per cent
Vienna,	No. not given (hospital),	24 "
Basle,	Time, 32 years (hospital),	23 "
U. S. Marine Reports,	61,202 white (hospital),	24 "
U. S. Marine Reports,	16,131 colored (hospital),	33 "
U. S. annually,	700,000, complete report,	12.8 "
Bellevue Hospital,	255 (4 years),	34 "
New York hospitals,	'92 and 93, 25 to 33	"
Montreal,	1012 (General Hospital),	20.4 "
New Orleans,	3969 (Charity Hospital),	29 "
Boston,	1000 (Mass. Gen. Hos., '22-'89)	25 "
Physician.		
Leberts,	205 (private practice),	7.3 "
Ziemssen,	— (private practice),	3.33 "
Bennett,	105 (private practice),	0 "
Brundes,	142 (private practice),	21 "
Laennac,	62 (2d decade)	9.5 "
Cullen,	832	22 "

In the collection of these records, Laennac, Cullen, Delafield, Da Costa, Loomis and Strumpell are quoted. The conclusions to be drawn are terse and varied:

1. The rate in hospitals is nearly three times that in private practice.

2. The rate increases from north to south.

3. General statistics show a rate a little less than one-half of hospitals.

4. The rate of the last decade of the century is much greater than that of the first.

These inferences are broad; to qualify the conclusions arrived at by statistics is to tamper with them. Drs. Coolidge and Townsend, in the study of 1000 cases in the Massachusetts General Hospital, claim "that in excluding fatal cases over 50 and those cases delicate, intemperate or the subject of some complication, the mortality from decade to decade does not vary from 10 per cent." This is interesting, but unfortunately statistics cannot be formed upon such a basis. Exclusion would complicate rather than simplify. It would render true the statement that "anything can be proven by statistics," and would destroy the integrity of conclusions. It is a great temptation to deal in exclusions, but statistics should be broad, inclusive and complete.

The records and treatment of a period go hand in hand, and the judgment of treatment is based upon its effect upon the records. Therefore they must be honest to enable us to be fair to treatment.

In the management of thirty-two cases of pneumonia in Bellevue Hospital, under the visiting physicians, Dr. Fowler, Dr. Dana and Dr. Lambert, the mortality was 25 per cent. The death rate of this disease in Bellevue is always high. The cases are unselected and composed, to some extent, of the tubercular and alcoholic types of the disease. It is to the alcoholic wards of this hospital that the pauper alcoholic and delirium tremens cases are transferred from the prisons and other hospitals, and in her medical wards that the pauper tubercular case finds rest on his way to Charity Hospital or eternity; as often the one as the other.

In the treatment of these cases it was my endeavor to classify them as nearly as possible according to Dr. Andrew H. Smith,* his classification being an admirable and comprehensive one, simple and easily followed in clinical work. He separated his cases into three divisions according to their clinical aspect, and on the basis that there is in pneumonia a local lesion and a systemic infection.

In the first division he includes cases where there are implications of the lung, varying in degree with little or no systemic infection.

In the second the cases present a severe systemic infection with a small area of lung involvement.

The third class is made up of cases in which there are secondary pulmonary and circulatory complications, and which in this series constituted by far the greater number and furnished the greatest mortality.

Each class presented a picture striking in its individuality. The lines could be sharply drawn, notwithstanding the fear in the beginning that the cases could not be properly placed. There were seven in the first, five in the second, and twenty in the third class.

The symptoms characterizing the first class were high temperature, ranging between 103 and 105.2 F., not of long duration and ending by crisis; pulse rate between 100 and 120, and never comparatively higher than the accompanying temperature; the respirations between 20 and 32. The ratios were physiological throughout. Area of involvement always two or more lobes. An accentuated pulmonary second sound with a strong heart in the background. A pulse of excellent quality, regular and full. Expectoration easily raised. Cough painful, but producing no exhaustion. Patients strong and able to sit

* International Magazine, July, 1892, "Pneumonia."

up for examination of thorax behind without undue fatigue or embarrassment of the heart.

Manifestly these patients required little treatment. With them, as with all the cases of the series, the treatment was expectant and symptomatic. Pneumonia jackets, made of flannel with a covering of oiled muslin, were invariably used; they promoted diaphoresis, acted as a protective against draughts, and were generally a source of comfort and satisfaction to the patients. Dover's powder, gr. V, q. 4h., to allay the pain of the accompanying pleuritis, guard against restlessness and insomnia; to induce perspiration; to lessen the secretion in the lungs and to control the cough. With each gr. V Dover's powder, calomel, gr. 1-4 was given to counteract the constipating effect of the opium. When the pain of the acute pleurisy was severe, thick hot mustard and linseed poultices usually gave relief. If an expectorant was necessary, ammonium chloride in gr. V doses was given every four hours. Dry cuppings or successive coatings of tr. of iodine in conjunction with the administration of pot. iodide and a nutritious diet gave very satisfactory results in tardy absorption.

Lænnac advised against the use of opium, saying that it often produced pneumonia. At the same time it was used in conjunction with calomel in some of the French hospitals (Salpetriere for one) and throughout England. Dr. George B. Fowler, under whom I had the honor to serve at Bellevue, favored opium and used it extensively in the form of Dover's powder. Da Costa, Strumpell, Loomis, Delafield and Peabody recommend its use.

Among the seven patients of this—the first class—there were no deaths. Perhaps to this set the statements, made individually by Dujardin-Beaumetz, Buquoy and Regal, that "most cases would take care of themselves," would apply. Not so to the cases of the two remaining classes.

In the second class—that of great systemic infection—the symptoms, both subjectively and objectively, were more severe. There were invariably severe muscular and mental exhaustion; an absence of resisting and sustaining power; an expression of anxiety; tremulous tongue and unsteady hands; restlessness and often delirium. The patients complained of severe backache and headache. Nausea, vomiting and a repugnant feeling against food often existed. Coughing sometimes produced an attack of vomiting, the two combined producing extreme exhaustion. Temperature, pulse and respirations were high. The pulse rate relatively higher than the temperature curve, of poor quality, feeble and often irregular. The respirations were always rapid. Here the statement is necessary that the lung

involvement in the five cases of this class equaled that of the cases of the preceding class. Only in this particular did my cases differ from Dr. Smith's type of the class. And my observations led me to differentiate the second from the first class, not so much by the degree of lung involvement with accompanying general infection, but alone by the additional systemic infection, with the resulting severe general symptoms.

The heart made a poor showing; the first sound feeble; the pulmonary second sound often scarcely audible, indicating that the cardiac muscle and innervation were poisoned by the severe infection.

The treatment of this class differed from that of the first in being aggressive. The control of the heart and circulation being the most important factors, next in importance came the stimulation of the system to sustain it over a crisis or a long lysis. The combination of tinct. of digitalis, m X and glonoin, m I, q. 4h., gave excellent results. The digitalis increased the force and reduced the number of contractions of the cardiac muscle; it prolonged the diastole and improved the condition of the heart muscle. The glonoin counteracted the stenotic effect of the digitalis upon the arterioles and in sufficient doses m II or III q4h., lessened the arterial tension and minimized the blood pressure on the heart wall. When general stimulation was necessary, whiskey, oz. ss., and strychnine, gr. 1-30, were valuable and often used. Carbonate of ammonia in gr. V doses was used as a stimulating expectorant. Vomiting was usually controlled by cracked ice or gr. X powders of oxalate of cerium. The obstinate cases by cocaine, in VII of a 4% solution q4h., or minim doses of Majendie. Often rectal injections of chloral, gr. XX, with sod. brom. gr. XXX, in oz. IV of water would control when other remedies had failed. A thickly-coated tongue was cleared by m X doses of dilute hydrochloric acid; or by the addition of dr. ss. of the acid to each pint of milk. In extreme restlessness or insomnia, sulfonal, grs. XX or XXX in hot milk; or sod. brom. gr. XXX repeated in an hour, if necessary, acted well.

One of the five cases of this class died; the patient had incontinence of urine and feces, a temperature between 105 and 106 deg. F., an uncontrollable heart and was delirious. In the four which recovered the subsidence of the temperature was by lysis; in marked contrast to the ending by crisis of the seven cases of the first class.

And now the third or final class, which must receive the bulk of consideration. It is the one which in hospital practice furnishes the greatest number of cases and the highest mortality. Its continued growth contributes largely to the increase in the death rate. Pulmonary and circulatory complications grafted upon a more or less solid

lung distinguish the class from the preceding two and render it the one most feared by the profession.

Twenty of the thirty-two cases were complicated and the complications encountered were:

1. Acute pericarditis.
2. Acute endocarditis; usually an awakened chronic condition.
3. Pneumo-pericarditis.
4. Acute general bronchitis.
5. Nephritis.
6. Pulmonary tuberculosis.
7. Alcoholic meningitis.
8. Delirium tremens.
9. Pleurisy with effusion.

Most of these complications are formidable. With the exception of the final one any one would make the fight severe. The short battles were fought by the pericarditis, endocarditis and bronchitis cases; the prolonged by the alcoholic, the nephritic and the tubercular.

The most striking symptoms and pictures were furnished by the cardiac cases—the tumultuous, struggling, irregular heart, with its dilated right or left ventricle or both, and absence of compensatory hypertrophy with the resulting pulmonary oedema, dyspnoea and cyanosis so productive of agony and a sense of impending death. Another picture quite as positive is presented by the alcoholic—the short violent delirium with fatal exhaustion; or the prolonged muttering delirium with jactitation; or the milder type with restlessness, muscular twitchings, expression of anxiety and the fear of delirium.

Extensive areas of consolidation were the rule—likewise a high temperature, rapid, weak, intermitting or irregular pulse and labored respirations. While the area of consolidation and its influence upon the general condition of the patient were closely watched, the complications received the active treatment, which, though wholly symptomatic, was vigorous to a reasonable degree.

In the pericarditis cases absolute quiet was obtained by the use of Dover's powder. Moderate catharsis was produced by the use of small doses of calomel. The ice bag over the precordium in the first stage relieved the precordial pain and distress, regulated and slowed the heart rate. Digitalis also slowed and in addition strengthened the heart, guarding against the chief thing to be feared—cardiac exhaustion. In the second stage counter-irritation by fly-blisters, with the internal use of the iodide of potash, promoted the absorption of fluid and lessened the tendency toward plastic adhesions. For prolonged stimulation whiskey and strychnine were the most reliable.

Digitalis, glonoin, strophanthus, or whiskey and strychnine were the most potent aids when—burdened by an incompetent valve, malnutrition, inflammation of its lining membrane, or its dilated right ventricle resultant to the blockade produced by extensive consolidation of lung tissue and pulmonary congestion—the heart failed to do its work.

When a combined cardiac stimulant and diuretic were indicated, as in the complication of nephritis, inf. of digitalis, oz. ss. by the mouth, or coff. sod. benzoat, gr. III, by the needle, were reliable and efficacious.

In the alcoholic cases control of the restlessness and delirium was aimed at by the use of sulfonal, the combination of sod. brom. and chloral; the violent delirium by Majendie alone or in combination with hyoscyamine. Here whiskey and strychnine played their greatest part. The growing popularity of strychnine is shown in the enormous increase in the amount used in the public hospitals in New York city in the past ten years.

For the following table of the consumption of strychnine salts I am gratefully indebted to Dr. Charles Rice, manufacturing chemist to the Department of Charities, New York city:

	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95
Strych. acet., oz.	2	8	12	12	4	7	13	15	24	28
Strych. nit., oz. . . . .	.	.	.	.	.	.	1	.	.	2
Strych. sulph., oz.	1	2	7	4	8	10	5	13	13	16
Total oz.	3	10	16	16	12	17	19	28	37	46

It is seen that the acetate is the most popular. In '94 and '95 the amount of this salt used doubled that of the sulphate, and in '95 was fourteen times that of the nitrate. The increase of the total amount used was from 3 oz. in '86 to 46 oz. in '95. Placing the average dose at gr. 1-30, in '86 43,200 doses were consumed; in '95, 560,400; the consumption of '95 being about thirteen times that of '86.

Of the twenty cases in this class, seven died. Every case lost was an alcoholic. One, in delirium, produced a pneumo-pericardium, probably "pyo" in character, by stabbing himself with a large safety pin, and constituting, withal, a case remarkable for its rarity. The signs were conclusive of the lesion named, but unfortunately an autopsy could not be obtained to verify the diagnosis.

To consider a few general lines of treatment pursued throughout the series:

Venesection was never deemed advisable. Lænnac and Cullen bled indiscriminately.

To-day even judicious bleeding is little practiced. The rapid, hard bounding pulse of the robust sthenic patient yielded readily to aconitine, digitaline and strychnine, the combination recommended by Dr. Delafield. In the two cases where it was used crisis followed in twenty-four hours. And with glonoin also to dilate the peripheral vessels thus, as Dr. A. H. Smith says, bleeding the patient into his own arteries, we could not justify ourselves in wasting blood by venesection.

Dry cups and hot fomentations to the chest were invaluable. The cups in the last stage of a pleurisy with some effusion or fibrous exudation; over areas where absorption was tardy in a drawn-out pneumonia; in general bronchitis with profuse secretion which threatened to suffocate, and in pulmonary œdema. When hot fomentations were indicated, the combination of linseed meal and mustard (8-1) in the form of a poultice one-half inch thick and covered with oiled muslin to retain the heat and moisture. These could be applied for an indefinite period without injury to the skin and were singularly effective in the acute pleuritis often accompanying the first and second stages of a pneumonia, in bronchitis and in pulmonary œdema. A thirty-six hour post-partum with the right lung and lower lobe of the left completely consolidated, an acute endocarditis and a pulmonary œdema, which hourly threatened to kill the patient, was admitted to the ward at midnight. Frequent dry cuppings in conjunction with digitalis, glonoin and whiskey controlled the œdema for twelve hours. The cuppings then failed and the entire thorax was wrapped in a thick hot poultice. This measure immediately and subsequently, when faithfully adhered to, controlled the œdema and gave the patient relief and rest. The actions of these methods, not only in this but in other cases, make me a firm adherent to their judicious employment.

Oxygen rendered signal assistance when dyspnœa was due to extensive lung involvement with a good heart in the background. I have, however, seen it prove fatal in cases of dyspnœa, where the heart was fagged out and incapable of standing the sudden impetus produced by a few inhalations of oxygen. Warm oxygen was more diffusable than cold.

When the temperature reached 104 degrees or over it was controlled by cold or luke-warm applications. The coal tar antipyretics were not used. Usually a sponge bath with a 50 per cent alcohol solution at 80 degrees reduced the temperature. In one or two cases where a chill and no reaction followed the bath, warm brandy was substituted with excellent results. In the violently delirious alcoholic

cases cold packs always reduced the temperature and usually lessened the degree of delirium.

It is a deplorable fact that the rational treatment of the present day does not reduce the mortality rate.

Bacteriology, since its discovery, has opened new and effectual lines of treatment. It has given birth to a principle which, if correct, will revolutionize the treatment of the entire class of infectious diseases—the production of artificial immunity by the means of serum therapy.

In the great bacteriological laboratories and hospitals of the world experiments are vigorously pushed against diphtheria, tuberculosis, typhoid fever, pneumonia, cerebro-spinal meningitis, cholera, cancer and tetanus. The thinkers and investigators are constantly and aggressively active, and sooner or later success is bound to crown their efforts.

The Inspection of Meat and Milk Supply.*

BY CHARLES E. DAVIS, M. D.

The subject of inspection of the meat and milk supply is one of the greatest questions that to-day is of interest alike to the breeder, consumer and doctor, and also one which should be presented with the determination to give to the people the assurance of healthful food of this kind, and at the same time, they the people on their part, should manifest the most intense interest in, and exert every effort to see, that sufficient money is appropriated by the State Legislature to properly carry out the work so well begun by the State Board of Health. Meat is consumed by all classes; but particularly those past the days of childhood, who are as a rule in good health, and able to resist disease to a certain degree. But the milk is consumed by millions of children who, in their early hours of life, have comparatively little power of resistance; and also by invalids, whose power of resistance from the invasion of any disease is at a very low ebb. It is the one article of food that we should have every assurance is good and wholesome. We, as medical men, should feel that we can with perfect safety furnish it *ad libitum*.

In my paper to-night I will only take up for discussion two or three of the many diseases which may be caused by infected cattle, namely, diphtheria, scarlet fever and tuberculosis, the manner in which they may be transmitted and their possible prevention. The

* Read before the Medical Society of the County of Albany, April 8, 1896.

other diseases, such as anthrax, foot and mouth disease, acute enteritis and glanders, are not as prevalent, and do not cause among the people the epidemics which at times prevail.

Here, let me say, that we must not look to cattle for the same manifestations of a disease which we find in man. Smallpox does not show the same symptoms or lesions in cattle as it does in man, but every one now believes that cow-pox and smallpox are one and the same disease. Numerous epidemic outbreaks of scarlet fever are now known in which milk was the vehicle of contagion. In many cases by infection from human scarlatina, and others in which such a mode of infection was probably excluded.

Up to 1881 a number of such epidemics were reported by Ballard, Buchanan, Jacobs, Robertson, Darbshire and others.*

‡Klein, in his article on the subject, says whenever and wherever in any given locality, a number of cases of scarlet fever occurs simultaneously in different and distinct households, having no intercommunications with one another—school, church, visitors—the first means of the spread of the contagion thought of is milk, and in all such epidemics on further inquiry it is found that milk or cream was actually the vehicle of contagion.

In the tabulated account of milk scarlatina, later referred to, several epidemics are mentioned in which it was caused by infection from a human source; that is, that either in the house of the milkman, or at one of the other stations of the milk on its passage to the consumer, the contagion derived from a case of human scarlatina was added to it.

Epidemics of this disease have been reported in which contagion from a human source can probably be excluded.* Dr. Darbshire reported such an outbreak in the spring of 1882, in which it was conclusively shown that the milk was the source of contagion and it was not fouled by human agency.† Mr. Powers reports in 1882 where infection from a human source could be positively excluded; an epidemic which could be traced to the milk supply from a certain farm where a cow suffering from some ailment, a marked feature being the loss of hair in patches, this being the most conspicuous manifestation, was found. Another outbreak, reported by the same authority, occurred in the year 1886 in the north of London. The source of this outbreak was associated with the distribution of milk from a certain farm, infection from a human source was excluded, and only the milk

* See table of Hart in the transactions of the International Medical Congress, 1881.

‡ Stevenson and Murphy Hygiene.

* St. Bartholomew's Hospital Reports. vol. xx.

† Mr. Power's report in the volume of Medical Off. of Local Government Board, 1886.

from certain cows had any relation to the spread of the disease. The disease, as it presented itself in some of the cows, says Mr. Powers, consisted in the presence of sores and scurfiness in different parts of the skin, with the loss of hair in patches, and an eruption leading to the formation of a sore, covered with a dark brown scab, or crust on the udder and teats, and a visceral disease, notably of the lungs, liver, kidney and spleen; although milder in character, very much resembled the visceral lesions occurring in cases of human scarlet fever.

In 1888 several outbreaks were reported in Glasgow, in which milk, supplied from cows suffering in a similar manner, was supposed to be the cause. Klein stated, that by inoculating six milch cows with the human streptococcus scarlatina, a definite eruptive disease was produced, identical with the above described disease.

No such epidemics have been reported in this country, yet they in all probability occur. The fact that the milk supply is derived from so many sources, and that it is not often inquired into by health authorities, may account for it.

Epidemics of diphtheria due to milk, in which it was shown that milk was the vehicle of infection, and that it did not receive its power from a human source, have been reported as occurring in Yorktown, Camberley, Barking and Croyden. In the Yorktown and Camberley epidemic Mr. Powers saw at the farm two cows which showed the signs of the disease on the teats, and one cow suffering from chapped teats, during the month in which the epidemic occurred. At Barking the cows whose milk produced the diphtheria (1888) suffered from a distinctly contagious eruptive disease, on the teats and udder, showing itself in sores covered with brown black crusts. The same was noticed with an outbreak of diphtheria at Croyden in November, 1890. Klein made some experiments in 1890-91 which strikingly showed that cows could be infected with the bacillus diphtheriæ and it was identical with the disease which had caused the above epidemics, in that it consisted of an eruption on the udder and teats, and that in the milk of the cows the bacillus could be with certainty found. *Hart reports six epidemics in which he could not find that the milk had been infected from a human source. Some ten or twelve such epidemics have been reported. In the Yorktown and Camberly epidemics one hundred and forty persons in fifty-seven households were taken sick in October and 90 per cent of them during an interval of ten days; 88.2 per cent of the people had the suspected milk and 88.5 per cent drank it; 84 per cent of families of the better class were affected, while only 20 per cent of the families of the poorer classes were, due to the fact

* See table of Hart in the transactions of the International Medical Congress, 1881.

that the rich people used five pints a day and the poor only one pint. Among children 10 per cent of those not special milk drinkers were attacked, while 70 per cent of the special milk drinkers were made sick. The infection of milk by diphtheria and scarlet fever from a human source has been a pretty well established fact, but the fact that epidemics have been caused by milk from cows suffering from the disease is not so positive. This line of investigation is a new one and it is to be hoped that sanitarians in this country will give the subject the thought and study which is necessary to establish the theory beyond a doubt.

We next come to the consideration of tuberculosis, the most important of these diseases, which may be caused by meat or milk which contains the germs. This disease exists to the greatest extent in large cities, one death in every eight being caused by it. In cattle we find the disease very prevalent and the New York State Board of Health has estimated that 7 per cent of all cattle are tubercular. Out of 2,417 cattle examined 405 were found to be tuberculous and were slaughtered.† These are very reliable statistics inasmuch as they were all examined by expert veterinarians with the tuberculin test. The use of the tuberculin where a reaction is obtained will give a greater percentage than any other, for the reason that it will give a reaction where lesions exist that are so small they may easily be overlooked in any physical examination. In Massachusetts† more than one-fourth of the herds examined are found to be affected. Every one now believes that tuberculosis is communicated from man to man, from animals to man or man to animals. That milk and meat convey it has unquestionably been proven. Lower animals fed with tuberculous meat have become tubercular.

The digestive tract of cattle proves a good means for the absorption of the germs, the paunch allows a prolonged accumulation of food while its many folds furnish a convenient resting place for microbes of all kinds. Experimenters have proven that tubercle bacilli are absorbed by the villi of the small intestines, but the following experiment would tend to show that they are not all so removed from the intestinal tract when taken into the stomach. ‡On the 3d, 4th, 5th and 6th of June, 1894, at midday a meal was fed to a yearling bull consisting of bread, and one-fourth of a cow's lung rich in tubercle bacilli. From the 6th to the 10th inclusive they collected 200 gm. of fæces which they diluted in 100 c. c. of water. The filtrate from this

* Tuberculous Commission Report, 1895.

† Osgood, American Surgical Bulletin, 1895.

‡ American Medical Surgical Bulletin.

product after standing twelve hours was injected into the auricular veins of rabbits to the amount of 2 c. c. for each. Fifteen were thus injected. Two died of septicæmia, one of intoxication, and the twelve others became tuberculous. Two died at the end of a month, presenting at autopsy a miliary tuberculosis of the lungs. The eleven surviving ones were killed between the 9th and 10th of July and showed tuberculous indurations scattered through the lungs, liver, spleen and kidneys. In addition to these inoculations, a microscopical examination of the fæces of the bull was made daily, resulting in every instance in the discovery of the Koch bacillus. These experiments seem to demonstrate that the fæces of the cattle are as capable of propagating tuberculosis as is the sputa of man. And it seems possible that a phthisical animal swallowing his pulmonary discharges could contribute to the dissemination of the disease through his fæces. Herchberger‡ found that in many cases tuberculous cows' milk was not different from the milk of normal cows, and no tubercle bacilli can be detected; yet the same milk, injected into the peritoneal cavity of guinea pigs, produces miliary tuberculosis in the peritoneum, spleen and liver. Out of twenty series of experiments only once could this bacilli be demonstrated in the milk; and yet in ten such experiments in which it did not show bacilli, it nevertheless produced tuberculosis on injection. Ballinger* showed that the milk from the healthy udder of tuberculous cows loses its infectivity after dilution (from 1-40—1-100). He advises against the use of milk from one cow, and encourages the mixing of milk from many cows, thereby diluting the tuberculous milk, and in that way causing it to lose its power of infection. It was generally supposed that unless a cow had tuberculosis of the udder its milk would not be infected. Ernst,† by examinations of milk of twenty-six cows, found the bacillus tuberculosis in twelve, or 38 per cent, of cows which had no tuberculosis of the udder, but had general tuberculosis.

Dr. Sims Morehead† states that the numerous cases of tuberculosis of the intestines of children are attributable to the use of tuberculous milk. In children not derived from tubercular parents, in which tuberculosis occurs, we must look for other sources than heredity. But yet a good many pathologists maintain with Virchow, that heredity means only a greater predisposition; and that if tuberculosis does appear in a person who is predisposed by heredity, it is due to infection with bacilli.

‡ Experm. Bertrage zur. Inf. der Milch Tuberculoser Thiere Munchen, 1889.

* Muncher Med. Zeitchr, 1889.

† Infectiousness of Milk, Boston, 1895. (Ernst).

† Woodhead, Med. Press and Circular, London, 1888.

In lieu of the above, it really seems that we, as medical men, ought to make a strong plea for a thorough and strict inspection of all cattle and milk which are used as articles of diet by the people. The present existing law in Massachusetts is well adapted to accomplish this result. The law is that no cattle shall be sold for slaughter in the state, unless they have been previously inspected and have a certificate that they are free from tuberculosis. If such a law was passed it would at once stop the scenes that are witnessed day by day at West Albany and Buffalo. Cattle are examined for sale in the east by the Koch method for tuberculosis, and if they are found diseased, as I have been told more than 7 per cent have, they are taken out of the herds and sold in New York state. We have millions of people in the State of New York who eat meat, with no safeguards thrown around them that what they eat is free from disease. It is true that some are eating inspected meats, but they represent a very small minority compared with those who are obliged to take whatever the dealer nearest their homes has a mind to serve to them. Many of the large meat dealers west have government inspection, mainly, Swift, Armour, Cudahy and others. But the large amount of meat is never inspected. The fact that the government inspection of meats is a failure has been admitted by Secretary Morton, for the reason that it fails to protect American consumers, while it guards the health of the foreign purchaser of our beef. The law permits the federal authorities to condemn, but not to destroy; and this stands in the way of an effectual interference on the part of the government officials to prevent the use of diseased meats in the country. You can readily see that the result of limiting the inspection of meats to that exported out of the state is that the inhabitants are, to a great extent, obliged to eat meat that is not good enough for outsiders. The tendency to discriminate in the matter of meat inspection cannot fail to be harmful to the home consumer. It certainly seems that it is of equally as much importance to have the interests of the consumer of meats at home as carefully guarded as those abroad, and doubtless the best and only method of bringing this about is to secure a uniform standard of inspection. The work now done by the New York State Board of Health must, to a certain extent, be negative, inasmuch as there is nothing to prevent the men who own herds of cattle, which have been inspected, from buying other cattle which may or may not have been examined. So if much good is expected to follow the inspection of cattle, it must be persisted in, and all cattle entering the state should be examined, as well as those in it. For our own city I would most heartily recommend that the ordinance which has been enforced by the New York

city board of health be enforced here, in order that we may at least have a pure milk supply. The ordinance of which I speak is the one prohibiting the sale of milk in the city of New York from dairies which have not been inspected by the city board. This might mean the expenditure of some additional money by the city, but it would certainly decrease the mortality from such diseases. This is a necessity, for the reason that the dairies supplying the city of Albany could also be examined, and the possibility of preventing the infection of milk from outside sources would be great. The city board of health would have the right to say, "Keep your cattle in a clean, healthy place or you cannot supply milk to the city of Albany." Finally, gentlemen, if you guard the food of the people you guard the health, for whatever be the disease promoting surroundings, the healthy body nourished by healthy food, can better withstand the encroachment of disease than the body whose vitality is impoverished by being improperly fed.

Cotton-seed Oil.—The truth of the saying that a prophet is not without honor save in his own country is fully exemplified in the case of cotton-seed oil. Nearly all of this product is exported from the southern states, the great bulk of it going to the foreign markets, the largest share of the remainder being shipped to the northwest, whence it comes back in the shape of lard. Of course, we know the most of what is shipped to France and Italy comes back from those countries as olive oil. If this product is valuable under the name of pure olive oil and lard, why is it not just as good as cotton-seed oil? With a minimum of manipulation and admixture it becomes a substance superior to lards or fats for cooking purposes. A good part of the lard used in this country at present is largely composed of cotton-seed oil. It would be greatly to the advantage of the southern states to recognize the value of this product and the possibilities in the way of its employment, and to depend less on the nature and traditions of everyday matters. Why is it any more a necessity to send the cotton-seed oil to the western packing markets to be made into cooking compounds? Why can it not even now be made into the shape suitable for this purpose and marketed on its own merits? The public has largely become educated to the fact that cotton-seed oil makes a more efficient and more wholesome substance for frying and shortening than does lard. And why can it not compete with olive oil on its own grounds as a salad oil? It is often better.—*Southern Journal of Science.*

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HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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ANNOTATIONS.

The Trendelenburg Position in Prolapse of the Funis.—There is an interesting letter by Dr. R. Abrahams in the *American Journal of Obstetrics* on this subject. He relates a case in which his attention was accidentally called to the value of this position in the treatment of prolapse of the cord. It was a case in which the vertex presented. On rupturing the membranes a very large quantity of liquor amnii escaped and a portion of the umbilical cord, estimated to be ten inches in length, was carried down by the gush of the waters into the vagina. The os was fully dilated, and the best plan seemed to him to be to deliver the woman either by forceps or version as quickly as possible. The patient's surroundings were of the poorest possible description, and the bed on which she was lying was "a wide, long board with four poles for feet to rest upon." While he was trying to get the patient in position for operating the foot of the bed gave way. This necessitated the raising and holding up of the foot of the bed some six feet from the ground while the supports of the bed were being repaired. On lowering the bed after this had been at last accomplished he examined the patient and was surprised to find that no part of the cord was to be felt in the vagina, and that the head was fully engaged. Delivery was effected quite naturally without any assistance. Dr. Abrahams ascribes the change in the condition of things to the extreme Trendelenburg position caused by raising the foot of the bed to the height above mentioned; and this appears most probably to be the true explanation of the sudden recess of the cord. He considers the Trendelenburg position much superior to the glenupectoral position formerly recommended for these cases, as being more comfortable for the patient, but, on the other hand, it has the disadvantage of causing difficulty in breathing. Still, as the position may only have

to be maintained for a short time, as in Dr. Abraham's case, treatment of prolapse of the funis by the Trendelenburg position seems to deserve a trial.—*The Lancet*.

The Kinetograph and the Clinic of the Future.—A French journal suggests that by the use of the kinetograph the clinical work of the future can be very much simplified. Kinetograph illustrations of clinical cases may be prepared and distributed throughout the country by means of university extension organizations. In this simple way post-graduate lecturers could talk at a kinetograph carefully prepared lectures, at the same time exhibiting patients to the revolving discs of the photographic machine; the results could be sold in regular lots at so many dollars per dozen.—*Medical Record*.

A Bereaved Father, but a Foolish Physician.—The daily papers of Berlin and New York have recently devoted much space and many conspicuous headlines to a singular episode which bids fair to reopen the warfare of the schools in respect to the virtues of diphtheria antitoxin.

Professor Langerhans is prosector of the Moabite hospital at Berlin. A servant in his family having been attacked with diphtheria, the physician recommended a preventive inoculation of the professor's child Ernest, aged 21 months. The professor consented—In a few minutes the child was a corpse: and the following day the educated world was startled by the newspaper announcement: "Our darling Ernest, while in the bloom of health, died as a result of an injection of Behring's curative serum."

With the utmost sympathy for this stricken father, we cannot repress a sense of the absurdity and heedlessness which mark his announcement to an indiscriminating public. Professor Langerhans had a perfect right to reject the proposed inoculation. He consented, because, as a scientific physician, it was his conviction that the preventive inoculations were efficacious and absolutely harmless, save in the rarest cases. He consented, precisely as he would have consented to a vaccination, to an injection of cocaine, to an administration of chloroform. Had not the child stood in great danger of diphtheritic infection, and had not all existing statistics, based upon thousands of cases, attested the innocence of the inoculations, the father would have had no moral right to permit the use of the serum in his child's case. Having used his best judgment, he now repudiates it, and in the paroxysm of his grief he throws all his sober, scientific convictions to the wind and makes a wild charge against the antitoxin, which cannot be substantiated. Any one of a number of accidents—an air embolism, for example—might have caused the disaster. At all events, what

does one death signify when it is overbalanced by thousands upon thousands of cures? Does it become any the less insignificant in a logical sense simply because the victim is the child of a Berlin professor? Is not a unit a unit?

Summarizing, we can only express the hope that time, the great healer and teacher, may assuage the father's grief and the professor's logic.—*Bulletin of Pharmacy*.

Purification of Drinking Water by Means of Filtration.—The report of the Massachusetts State Board of Health for the year 1894 contains some very interesting and important facts.

For the past seven years the Board has maintained an experimental station at Lawrence for the sole and express purpose of testing the efficacy of filtration of water to purify it and render it fit for household purposes. The water tested was that of the Merrimac river, which is lined from source to mouth with manufacturing towns and which may be taken as a fair sample of river water contaminated with a considerable amount of organic matter.

The filters were of all sizes and thicknesses, from those a few feet square and ten inches in depth, to the large filter covering two and one-half acres, through which the water supplied to the city of Lawrence has been filtered since 1893.

Chemical and bacteriological examinations were made weekly, and sometimes daily, of the water of ingress and egress. Sand of different sizes was used, and the filters were run both intermittently and continuously. The results of this careful and painstaking investigation, extending over a number of years, and every source of error being eliminated, are both astonishing and gratifying.

From a bacteriological standpoint they prove that a properly constructed and properly managed filter will remove from 98 to 99.84 per cent of the ordinary bacteria in water, and that if such bacteria as the bacillus prodigious, which is very similar to the typhoid bacillus, be added to the water in varying proportions, the filter will remove from 99 to 99.993 per cent. The organic matter in solution is greatly diminished and the water is chemically purified.

Moreover, the efficiency of the filter, instead of diminishing, increases with age and use, owing to the formation of a gelatinous coating about each grain of sand, which serves to entangle the bacteria in their progress.

The rate of filtration may reach five million gallons daily per acre of filter without impairing the efficiency. If the surface clogging is properly removed there will be no appreciable difference in the quality of the filtered water during or after the process of removal.

Finally the cost of construction and maintenance of such filters is not so great as was supposed, and is not to be compared with the benefits derived from their use. The one which has been in successful use in the city of Lawrence proves that the plan is practicable in supplying cities with potable water. It seems to us that the knowledge derived from these experiments should be spread abroad and attention of municipal authorities called to them.

In the immediate vicinity of New York the water of the Passaic river has been for a long time very bad and is constantly growing worse as regards its contamination with sewage and the waste of manufacturing plants on its banks. Several large cities and towns obtain their water supply from this source and if there is a practical and economical means of rendering this water pure and wholesome, it certainly ought to be adopted.—*Medical Record*.

The Absorption of Inorganic Iron.—In the physiological laboratory of the University of Utrecht, W. Woltering has made a series of experiments which cast light on the disputed question of the absorption of iron salts and their utility for the formation of hemoglobin. Most authors hold that the absorption of inorganic iron is attended with great difficulty, and at the last German Congress of Internal Medicine, Bunge maintained that even if it were demonstrated that inorganic iron is absorbed, it would not prove that the organism can utilize it for the formation of hemoglobin.

In fact, experience has shown that the inorganic compounds of iron, when ingested, are not again encountered in either the urine or the bile. Being rejected in their entirety with the feces, it would seem to follow that the iron merely passes through the intestines, unless it be admitted that this metal, first absorbed by the mucous membrane of the digestive canal then abandons its interior field of action by the same channel. Now, the therapeutic value of iron salts being generally recognized, Hannon and (later) Bunge contend that their utility is not due to their absorption, but solely to the fact that they combine with the sulphuretted hydrogen of the intestine and thus protect the iron contained in the alimentary substances in the form of organic combinations (hematogen, etc.), the only forms that the intestine is capable of absorbing.

If this hypothesis were true, the salts of manganese should produce the same effect as the salts of iron, since they react similarly with sulphuretted hydrogen. But Woltering has found that is not true in the white mouse, the rabbit, or the dog. After ingesting protosulphate of iron with the food, the liver becomes much richer in iron—a fact previously reported by Kunkel. On the other hand, the

same dose of the protosulphate of manganese causes no accumulation of iron in this organ.

To determine whether the inorganic iron, absorbed and deposited in the liver, may be utilized by the organism for the formation of hemoglobin, the author made a comparative study of the regeneration of the blood in several animals which had been bled. Some received the ordinary food; others, the usual ration plus protosulphate of iron or protosulphate of manganese. In the animals receiving the iron the regeneration of the red corpuscles and the hemoglobin proceeded much more rapidly than in the others.

Hence the author concludes that inorganic iron is not so sparingly absorbed as has been held heretofore. After being absorbed by the mucous membrane of the digestive canal, the iron is transported to the liver, and in the course of this journey the inorganic compound becomes organic (hepatin, nucleo-proteids, etc.). The iron deposited in the liver is undoubtedly destined to yield hemoglobin; the superfluous part of the absorbed iron abandons the organism through the intestines.—*Journal de Pharmacie*.

Electrical Units.—The five principal units of current electricity are: the volt, ampere, ohm, coulomb, and farad.

The volt is the unit of intensity. It may be compared to the steam pressure of a steam engine, or the pressure of a column of water flowing into a vertical pipe.

The ohm is the unit of resistance, and may be compared to the resistance of a pipe to the water flowing into it.

The ampere is the measure of rate of flow of current and is that quantity which would pass through a circuit having one ohm resistance when urged with a pressure of one volt. It does not include the idea of time or of real pressure. It does not include the idea of flowing through a circuit as the result of either the smallest fraction of a volt, or of 1,000,000 volts, depending upon the resistance of the circuit. The rate of flow, however, would be exactly the same as that resulting from one volt through one ohm.

The coulomb is the measure of quantity of flow—that is, current flowing at the rate of one ampere for one second—and is also termed the ampere second. This quantity is so small that in practical battery, electric light and motor work the ampere-hour is taken as the measure of quantity.

The farad is the measure of capacity. The capacity of a surface which can hold one coulomb of electricity at a voltage or pressure of one volt is a farad. It may be compared to the capacity of a container filled with gas. Under a certain pressure it will hold a certain amount

of gas. Double the pressure and it will hold double the amount of gas. Similarly, a surface which would hold one coulomb at a pressure of one volt would hold two coulombs at a pressure of two volts, etc.

The watt is the mechanical use or work power. The number of watts may be obtained by multiplying the number of volts or the electro motive force, by the number expressing the amperage, or the current. A force of 746 watts equals one horse-power.

One must not fall into the error of considering electricity a fluid because of these comparisons. The units may be easily explained by the analogy of a current of fluid, but the ancient theory that electricity is an "imponderable fluid" is now considered untenable.—*Popular Science News*.

Costly Ignorance.—There is a world of good sense in the following assertions made by Professor Chittenden of Yale, in the course of an address on "The Value of Meats as Foods," delivered last January before the Pratt Institute of Brooklyn. He declares that there is a lamentable amount of ignorance in regard to the nutritive of proteid foods, especially those of animal origin, and coupled with this is an utter lack of appreciation of the real connection between nutritive value and cost. The cheapest food is that which supplies the most nutriment for the least money. That "the best is the cheapest" is not true of foods, for the term "best" in this connection is ordinarily applied to that which has the finest appearance, the finest flavor, the most tender structure, etc., and does not imply that it is the most nutritious, healthful or economical. Its high price is dependent solely upon its fine appearance or its rare flavor, the question of nutrition being a minor consideration. Thus there is no more nutriment in a pound of proteid from tenderloin steak than in the same weight of proteid from the neck or shoulder, and yet note the great difference in the cost. The high-priced tenderloin is simply a dietetic luxury, quite justifiable for the man who can afford it as any other luxury may be, but not to be recommended on the ground that it is more nutritious.

A great deal of this kind of folly is attributable to lack of knowledge of the art of cooking. The housewife, not knowing how to properly prepare the cheaper grades of meat as to make them palatable and attractive, concludes that they are not as nutritious as the more tender and juicy cuts that can be bought at a higher price, and which require little judgment or skill to prepare for the table. Here is a field for missionary labor that will repay the cultivation, and that it is being appreciated is fully demonstrated by the establishment of New England kitchen schools of cookery and other kindred institutions in our large cities.—*Bulletin of Pharmacy*.

Alumnol in Gonorrhea.—Chotzen (Journ. de Medecine de Paris, Jan. 12, 1896) holds that alumnol, 1 per cent, destroys gonococci without increasing inflammation. Bacteriological examination of the discharge shows beyond cavil the inhibiting action of the alumnol upon the gonococci. For anterior urethritis a 1 or 2 per cent solution (3iss) is employed at first six times a day, later three times a day. When the gonococci disappear the solution is reduced to $\frac{1}{4}$ – $\frac{1}{2}$ per cent. In posterior urethritis a solution of from 1 to 5 per cent is instilled, or alumnol ichthyolate is employed in 2 to 10 per cent. In cases of urethral or cervical gonorrhea in women injections of alumnol ichthyolate is employed, also alumnol bougies.—*Therapeutic Gazette*.

What Constitutes a Normal Antitoxic Unit?—This is a query often addressed to us by correspondents who confess themselves entirely at sea as to the potency of diphtheria antitoxin. In the following note we shall seek to make perfectly clear the meaning of the normal unit, but no lucidity of explanation can do away with the necessity for a little memorizing.

The first thing to remember is the fact that of a standard toxin or diphtheria virus, 0.1 cc. is a dose fatal to a guinea-pig of average size.

A normal serum is one possessing such potency that 0.1 cc. will completely counteract the effects of 1 cc. toxin; in other words, 0.1 cc. normal serum will save ten guinea-pigs from the fatal dose.

One cubic centimeter of normal serum will counteract 100 fatal doses or 10 cc. of toxin, and this constitutes a normal unit.

One cubic centimeter of our antitoxin No. 1, possessing a potency of 60 units, will therefore counteract 600 cc. of standard virus or toxin.

One cubic centimeter of our antitoxin No. 2 (100 units) will counteract 1000 cc. toxin.

One cubic centimeter of our antitoxin No. 3 (150 units) will counteract 1500 cc. toxin.

For greater clearness we repeat the foregoing in the form of an equation:

0.1 cc. toxin=fatal dose to medium-sized guinea pig.

0.1 cc. normal serum=1 cc. toxin, or 10 fatal doses.

1 cc. normal serum=10 cc. toxin, or 100 fatal doses, or one normal unit.

The dose (10 cc.) of our antitoxins, Nos. 1, 2 and 3, possesses a potency of 600, 1000 and 1500 units, respectively.—*Parke, Davis & Co., in Pharmacal Notes*.

Smallpox Hospitals as Nuisances.—The High Court of Justice, England, has just rendered a decision with regard to the question as

to whether or not a smallpox hospital is a nuisance. Arrangements had been made to build a hospital upon a lot which was surrounded on all sides by a common on which cattle fed and children played. Although thus isolated the neighbors brought an injunction against the hospital management, and tried to prevent the erection of the buildings on the score that it would be a source of danger. The prosecution got a number of experts to testify that smallpox could be conveyed for long distances by air. But the judge refused to grant the injunction and allowed the hospital to be built.—*Medical Record*.

Medical Tortures of the last Century—Mirabeau's Fatal Illness.—The chief disease of the illustrious Frenchman (although it was not detected during his life) seems to have been a chronic pericarditis with angina pectoris. The following is the synopsis of the medicinal tortures through which he passed: Venesections to the extent of eighty ounces in two hours, followed by corrosive sublimate baths, and by blisters on several places near the head; by a cautery or issue near the inflamed spot; by "mild sudorifics, diuretics and purgatives, and depurative and tonic mineral waters." When colics supervened emetics and saline purgatives were administered and mercurial frictions applied to the swollen glands of the neck. For the anginal attacks the remedies were warm baths and purgatives. As the patient's strength declined and the paroxysms of angina grew severer, venesection from the foot was practiced, and large blisters were applied to the calves of the legs, and sinapisms lower down, and these were renewed on each recurrence of the paroxysms along with the agents previously employed, and camphor was given internally. A few days later poultices containing cantharides and mustard were wrapped around the feet, and saline laxatives were administered. Even then the illustrious patient was not allowed a chance to live, but leeches were applied to the chest, bleeding from the foot was repeated, and cantharidate sinapisms were applied where the skin had previously been blistered, as well as fresh blisters upon the thighs. Musk was then administered, and Peruvian bark, which aggravated the symptoms; blisters were laid upon the arms and camphor administered in half-hourly doses. As these blisters failed to vesicate stronger ones were substituted. In the whole course of the agonizing disease not a particle of any narcotic was administered. To characterize such treatment, no other word than brutal is fitting.—*Dr. Alfred Stille, in University Medical Magazine*.

READING NOTICES.

THE UNITED STATES OF AMERICA, }
Northern District of Ohio, Eastern Division, ss. }

At a stated term of the Circuit Court of the United States, within and for the Eastern Division of the Northern District of Ohio, begun and held at the City of Cleveland, in said District, on the first Tuesday in February, being the 4th day of said month, in the year of our Lord, One Thousand Eight Hundred and Ninety-Six, and the Independence of the United States of America, One Hundred and Twentieth, to-wit: On Tuesday, the 25th day of February, A. D., 1896.

Present, the Honorable Augustus J. Ricks, U. S. District Judge.

Among the proceedings then and there had were the following, to-wit:

THE DREVET MANUFACTURING CO., }
vs. } In Equity.
A. P. BEACH. } No. 5494.

This cause came on to be heard, this 25th day of February, A. D., 1896, on motion of the Complainant for an order to defendant to show cause why an Injunction *Pendente Lite* should not issue against him as prayed for in Complainant's Bill, and on reading said order herein, and proof of service thereof on defendant, and the bill of Complainant's, and the affidavits on behalf of Complainant's filed therewith, and Counsel for Complainant having been heard, (defendant not being present or represented) the same having been duly considered by the Court, and it appearing that Complainant has adopted the trade mark as set forth in their bill, and caused same to be registered as appears by the certified copy of the certificate of such registration, to-wit: Certificate No. 18236 also introduced in evidence by the Complainant, and it further appearing that said defendant has infringed on the rights secured by said complainant, as set forth in its bill. Now, therefore, it is hereby ordered, adjudged and decreed that a preliminary injunction be issued pursuant to the prayer of the Complainant's bill, strictly commanding and enjoining the said defendant, A. P. Beach, his clerks, agents or workmen, under the pains and penalties which may fall upon them, and each of them, in case of disobedience, that they forthwith, and until the further order, judgment and decree of this Court, desist from making and selling a liquid preparation put

up in bottles with labels applied thereto, bearing the name of "Glycozone", or in any manner using the name "Glycozone" in circulars or labels put out by him, referring to the said standard preparations of said Charles Marchand, in connection with instructions for the use of said product "Glycozone" as a preventive of conception, or in any manner connecting it with the use his so-called "Applicator" as a preventive of conception, or in any manner making or selling, or causing to be sold in connection with said Applicator, or using, or prescribing its use as a preventive of conception, or in any manner using, making or selling, or sending out circulars giving directions to use "Peroxide of Hydrogen" (Marchand's Medicinal) in connection with the use of said "Applicator" as a preventive of conception, and that defendant deliver up to be destroyed, or destroy all bottles, labels, circulars or other things containing complainant's trade mark.

Ferratin: Iron Tonic and Food.—In Sajou's Annual of the Universal Medical Sciences, 1895, vol. V, A, 90-91, Dr. Dujardin-Beau-metz summarized the record of Ferratin, the new iron food and tonic reconstructive, as follows: Ferratin is the name given by Schmiede-berg (1) (2), of Strasburg, to that combination of iron which is found in the normal tissues and which is stored up in the latter as a reserve from which it may be drawn for the formation of blood. He has succeeded in producing this substance, by artificial means, in the form of a powder of red-brown color, like ioxide of iron. Two forms are known to commerce—the one simple and insoluble in water, the other a sodium compound which readily dissolves on stirring after being allowed to stand a little while in water. The latter must be as free as possible from lime, otherwise an insoluble calcium compound is formed. Ferratin, in contradistinction to those compounds of iron hitherto in use, is readily assimilated and does not produce any unpleasant disturbances in either the gastric or enteric functions, even when used for a lengthy period; indeed, in some cases its exhibition seems to produce improvement in the appetite and regularity in defecation. As a portion of the substance is decomposed by the acid gastric juice and also by sulphuretted hydrogen, a sufficient quantity of ferratin must be ingested to leave an overplus in the bowel-tract so that the organism may pick up as much as it requires. There is no necessity whatever to anticipate overloading of the organism with the iron, as absorption and excretion appear to be mutually controlling. Excretion does not take place through the kidneys. The daily dose for adults is 1 to 1.5 grammes ($15\frac{1}{2}$ to $23\frac{1}{4}$ grains). Acids should be avoided but no other restrictions are necessary. Schmiedeberg points out that ferratin is first and foremost a food and its use is indicated in all cases in which nutrition and blood-formation is unsatisfactory.

Banholzer, of Eichhosts's clinic (3) (4), relates his clinical investigations with this preparation. In anaemia following acute disease the hæmoglobin was quickly increased (over 5 per cent in eight days), as also the number of red cells. In chlorosis the same results were visible even in a more marked degree. The general condition was improved and the increase in weight in most cases considerable. The good effects on the appetite were obvious. When compared with Balud's pills, which also give good results, ferratin was found to lead to a greater increase in the hæmoglobin. John Harold (5) found that in three cases of severe anaemia the preparation appeared to exert a remarkable hæmatinic effect; it did not interfere with digestion or produce any constitutional disturbance. In one of the patients, iron, in the form of a scale-preparation or as reduced iron, had been previously given for twelve months without apparent benefit.

Germain See (6), has also tested ferratin, and finds that it can be employed in men apparently healthy or in children and chlorotic subjects, the curative action not being interfered with by injurious secondary effects, as is often the case when ordinary ferruginous preparations are used. The dose used by him is from 0.05 to 1.5 grammes (7.8 to 23¼ grains) two or three times a day. Each dose contains about 7 per cent of iron. Marfori (7) states that care should be taken not to associate it too closely with acid materials. Hugo Weiner (8) reports twenty cases in which it produced favorable results.

(1) Archiv für experimentelle Pathologie und Pharmacil, Leipzig; 23, Nos. 2 and 3.

(2) Provincial Medical Journal, Leicester, Eng., April 2, '94.

(3) Centralblatt für Klinische Medizin, Leipzig, Jan. 27, '94.

(4) British Medical Journal, Feb. 17, '94.

(5) Practitioner, London, August, '94.

(6) La Presse Médicale, Paris, August 25, '94.

(7) Annali de Chimica e di farmacologia, Milan, Feb. 1, '94.

(8) Prager Medizinische Wochenschrift, Prague, April 18, '94.

Pneumatic Truss Pads.—Those who are obliged to wear trusses have suffered from pads that are supposed to hold up the ruptured parts, and to alleviate the pain thus caused. Hard and soft pads have been devised and all proven more or less unsatisfactory.

A pneumatic truss pad that is non-collapsible has been invented by G. W. Flavell and can be used on any truss. It has been found to correct all the difficulties of the old pads and gives instant relief.

One of the new pads should be in every physician's office, and a sample can be obtained at the nominal price of 50 cents, from G. W. Flavell & Bro., 1005 Spring Garden street, Philadelphia, Pa.

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\$1.00 A YEAR.

Symptoms of Diphtheria.*

BY HOWARD VAN RENSSELAER, PH. B., M. D.,

Associate Professor on General Medicine in the Albany Medical College.

There is somewhat of a difference in the minds of physicians in regard to the classification of the diphtheritic process; some considering it a local disease, generally of the mucous membranes, with constitutional symptoms; and others hold it to be one of the acute infectious exanthemata with localized lesions. It may be considered also from an anatomical standpoint depending on the part affected; as for instance, a nasal, tonsilar, pharyngeal, laryngeal diphtheria, etc., or, it may be studied clinically from constitutional symptoms chiefly, as the mild variety, the typical form, and the malignant type.

It is from this latter clinical standpoint, considering it to be an infectious exanthem with well marked constitutional symptoms, and with varying and more or less important local lesions, that we will consider the symptomatology this evening.

Should the poison be conveyed by inoculation, the symptoms manifest themselves early, usually within a day or two, and generally the type is severe. When the disease is contracted in the ordinary way, by inhaling the specific germ as it floats about in the air, the period of inoculation is longer, but even when the source and the time of exposure are known, one cannot definitely prognosticate the time of commencement of the symptoms, which may appear in from two days to two weeks or even longer, though in a majority of cases the onset occurs between the second and the eighth days. In a general way the earlier the symptoms appear the more severely is the disease apt to run its course. There may be a prodromic stage of short duration in any of the varieties, the manifestations being general malaise and anorexia; symptoms of no great moment of themselves and apt to pass unnoticed.

*Read before the Medical Society of the County of Albany, February 19th, 1899.

By the *Mild* variety we mean that form in which the exudate develops on and is confined to the fauces, and does not spread to the larynx, and in which the constitutional symptoms are not severe; recovery terminating the disease. The onset in this variety resembles that of any commencing mild pyrexia, and has nothing characteristic about it. The patient experiences slight chilly sensations followed by the ordinary phenomena of general febrile disturbance such as fever-ness, pains in the back and limbs, lassitude, and loss of appetite. Examination shows a flushed skin, brilliant conjunctivæ, a coated tongue, a rapid, full, bounding pulse, and the thermometer reveals a temperature of perhaps 100° – 101° . Soon symptoms referable to the throat which are more characteristic make their appearance. There is some difficulty in swallowing, together with a constant sense of sore-ness and fulness about the throat, and external pressure over the tonsillar regions produces a tenderness often amounting to pain. Then examination of the tonsils discloses a slight bluish white membrane, occurring either in spots or diffused over the whole tonsil; this pellicle is raised upon an inflamed and angry mucous membrane, which extends over the whole of the posterior portions of the mouth and pharynx.

At first there may be some difficulty in distinguishing the isolated diphtheritic spots from an ordinary follicular tonsilitis, but by the second day a continuous thick membrane has developed, of a dirty yellowish opaque appearance, resembling chamois skin, and the diagnosis is no longer doubtful. By the following day a muco-purulent discharge about the false membrane is noticed, and the pillars of the fauces and uvula become swollen and oedematous, and narrow the space between the tonsils; the glands of the neck are also swollen. The membrane is firmly adherent, and attempts to dislodge it cause bleeding. Gradually the edges of the exudate become ragged, and of a dirty brown color, and slowly slough away. The fever which characterized the commencement of the disease continues for two or three days and then gradually subsides by lysis so that by the fifth or sixth day, it has completely disappeared; the pulse however remaining rapid and somewhat weak for several days longer. By the end of ten or twelve days the entire membrane has disappeared, the parts beneath are healthy and the patient has recovered.

Mild as the symptoms and short the course of this variety, yet it is just as apt to be followed by paralysis and other sequelæ, and is just as liable to communicate a malignant type to some one else exposed to the contagion, as are the more severe and pronounced cases.

By the *Typical* form is meant that variety in which the membrane exhibits no tendency to remain localized, but on the contrary spreads into the nares, eustachian tube, larynx and trachea, and in which the symptoms of blood poisoning are pronounced and suffocation is imminent. The onset is much more marked usually than in the mild variety, being ushered in often by a distinct rigor, and, in cases of children, frequently by vomiting and even convulsions. The temperature is also higher than in the mild form, though the pyrexia in diphtheria is rarely extreme, usually being 101-102, but the pulse is much more rapid and feeble than the fever should warrant. This thready, feeble pulse, together with the marked depression, lassitude, and apathy of the patient, point to blood poisoning rather than pyrexia. The symptoms referable to the throat develop early and are of the same character as in the mild variety except that the lymphatics of the neck are more enlarged and the membrane soon spreads to the uvula and walls of the pharynx. By the third or fourth day hoarseness is noticed and often complete aphonia. Then dyspnoea soon develops both as regards inspiration and expiration, and is often extreme, as seen by tracheal tugging, inspiratory depressions under the clavicles, and especially at the lower zone of the thorax, and accompanied by gradually increasing cyanosis. If the patient lives the membrane separates on the fourth or fifth day, and is expectorated, then the mucous surface may return to a condition of health or a new pellicle may form. The same may be said of the exudate on the fauces. The course of the development and casting off of the membrane takes about a week, and the clinical history of a favorable case lasts about a fortnight or longer.

The *Malignant* type is that in which the patient is overwhelmed by the virulence of the blood poisoning, sometimes even before the throat symptoms are manifest, and usually the faucial disturbance is unimportant. The onset is apt to be severe, characterized by chill, vomiting, or even convulsions, but the pyrexia after the first day or two almost disappears, and the symptoms are those of toxæmia. The patient is in a state of marked prostration, and is evidently extremely ill. He lies in bed listless and apathetic, and can scarcely be aroused. The skin is an ashen gray, the eyes dull, the pulse thready, rapid and irregular; constipation is present and the urine scanty or even suppressed. Feeding is difficult on account of the semi-unconscious condition of the patient. Soon a low muttering delirium sets in, from which the patient cannot be aroused, and in a short time death closes his career.

In the ordinary cases of diphtheria, sometimes we meet with complications and often enough sequelæ.

The complications are those of extension to or ulceration of different parts of the respiratory tract and involvement of other organs from poisoning by toxins. Locally we get from time to time hemorrhage, due to ulceration from the nose, throat, or even from the bronchi, and occasionally petechial hemorrhages are seen under the skin; and other skin rashes, especially erythema, are not uncommon.

By extension downwards of diphtheritic process or more probably by inhalation of particles of the membrane, acute bronchitis and more especially capillary bronchitis, or broncho-pneumonia with atelectasis or even gangrene may develop.

Kidney symptoms are also common, albuminuria being present in most severe attacks; it may be slight or profuse, and is sometimes associated with epithelial or blood casts; occasionally suppression of urine is present, and rarely dropsy develops later.

Cardiac symptoms are frequently seen; heart failure or fatal syncope may occur at any time during the attack or after convalescence has set in. Some individuals suffer from tachycardia, others from bradycardia. Of the sequelæ, paralyses are the most important. They come on usually during the second or third week of convalescence, in from ten to fifteen percent of all cases. One of the most common of the local paralyses is that of the velum palati, which is recognized by the nasal character of the voice, and by regurgitation of fluids through the nose. Sometimes the paralysis involves the eye and strabismus, ptosis, or loss of accommodation may result. Facial paralysis sometimes occurs, at other times it may involve one or another limb. Occasionally multiple neuritis develops.

A consideration of the other throat conditions which resemble diphtheria would at once involve us in a discussion of differential diagnosis, and as that is the subject of another paper, these morbid conditions will not be discussed here. When we take a general oversight of diphtheria, especially in the light of recent bacteriological research, it seems evident that we are now on the threshold of a great change as regards our knowledge of this disease; a change of a similar character to what has happened to other diseases in the past.

A century or two ago, measles and scarlet fever, for instance, were considered to be the same disease and were called under a single name. A closer investigation of the conditions, and a more profound study of all its clinical aspects, demonstrated conclusively that there two entirely separate and distinct maladies, which up to that time were thought to be simply varieties of the same morbid process. And in

this country, it is only sixty years ago that typhus and typhoid fever were first differentiated. And in the specialties of medicine, many such instances in the evolution in our knowledge by the separation of diseased conditions from each other, are still taking place. It is not surprising, then, that what we call diphtheria now, is, we have strong evidence of believing, really made up of two distinct and separate diseases, although we do not as yet know sufficiently about them to clearly differentiate them, or to give them scientific names, but simply call them for the present diphtheria and pseudo-diphtheria.

Bacteriology is the factor which has cleared up many obscure points for us, but even yet it has not entirely unveiled the mystery. It has taught so far, that two very different germs are found in the membranes of the throat, both of which are capable of producing somewhat similar symptoms and physical signs; and also we are beginning to appreciate the fact clinically that where the streptococcus is present the disease is apt to run a more mild course, and that paralyses rarely occur; and that where the Klebs-Löffler bacillus is found the toxæmia seems to be more profound.

Observations based on bacteriological research have not as yet been made sufficient to bring out clearly the difference, if any, in the method of incubation, and in the development and course of the disease, but medical knowledge is developing so rapidly that we may confidently hope that in a short time we may have a clearer insight into the two diseases, and may be able to make an accurate differential diagnosis between the two conditions, to the advancement of science, to the increase of our own knowledge and satisfaction, and to the material advantage of our patients.

The Second Pan-American Medical Congress.

The committee on organization of the Second Pan-American Medical Congress has elected Dr. Manuel Carmona y Valle, President, Dr. Rafael Lavista, Vice-President, and Dr. Eduardo Liceaga, Secretary, and has announced November 16, 17, 18, 19, 1896, as the date of the meeting to be held in the City of Mexico.

The most cordial invitation is extended to the medical profession of the United States to attend and participate in the meeting.

Titles of papers to be read should be sent at the earliest practicable date to Dr. Eduardo Liceaga, Calle de San Andres num 4, Ciudad de Mexico D. F. Republica Mexicana.

The date selected is in the midst of the delightful midwinter season when the climate of Mexico is the most attractive to the northern visitor.

The occasion should stimulate the medical profession of the United States to a most cordial reciprocation of the generous patronage accorded the Washington meeting of the Congress by our Mexican confreres.

It should be remembered that the United States is the largest, and in many regards the most important of the American Countries and as a consequence more is expected of it than of any other Occidental Nation. In no particular is this more true than in the maintenance of position in the realm of scientific medicine on the Western Hemisphere. It is, therefore, simply essential that in this Congress—the most important of all Medical Congresses, in its exclusive, yet broad, American significance—the best thought and the best work of the American profession shall be conspicuous in the proceedings.

The zeal and enthusiasm of the Mexican profession and the active interest of the Mexican Government are co-operating to make the second Pan-American Medical Congress attractive, important and memorable.

Those who contemplate attending should send their names and addresses at as early a date as possible to Dr. Charles A. L. Reed, St. Leger Place, Cincinnati, that the Committee in Mexico may be advised of the probable attendance.

WILLIAM PEPPER,

ex-officio President.

A. M. OWEN,

A. VANDER VEER,

CHARLES A. REED,

ex-officio Secretary.

INTERNATIOBAL EXECUTIVE COMMITTEE FOR THE UNITED STATES.

Pan-American Medical Congress Bulletin.

Professor Dr. Don Francisco Bastillos, Calle de Tacuba No. 7, Ciudad de Mexico D. F. Republica Mexicana, has been elected treasurer of the Second Pan-American Medical Congress to be held in the City of Mexico beginning the 16th of November. All members residing in the United States and Canada, and others who contemplate attending should forward the registration fee, \$5, gold, to him at once and notify Dr. C. A. L. Reed, Cincinnati.

In Memoriam.

Tributes to Dr. Thomas Hun.

At a special meeting of the **Faculty of the Albany Medical College**, held June 23, 1896, to take action on the death of Dr. Thomas Hun, a biographical sketch was read by Dr. Vander Veer, remarks were made by Drs. Ward, Hailes and other members of the faculty, and the following memorial minute was ordered entered upon the minutes, transmitted to his sons, and published in the daily papers:

“The members of the faculty of the Albany Medical College, assembled in special meeting, June 23, 1896, on the occasion of the death of Dr. Thomas Hun, Dean of the college, Emeritus Professor of the Institutes of Medicine, and one of the earliest members of the faculty, desire permanently to record upon their minutes the sense of loss which they experience, and the sorrow which they feel, in the death of their honored associate and friend. When they review the history of his long and useful life, memorable for professional researches, wise counsels and beneficent deeds no less than for successful labors in behalf of this school during the greater part of his existence, and for distinguished services rendered to the profession of which he was so conspicuous and illustrious a representative, they realize that in the death of their eminent and honored associate their loss is great, and that they have been bereft of a wise counsellor and a steadfast friend. But the memory of his long life, full of good works and kindly deeds, remains and will be ever cherished, serving both as an example and as an encouragement to them and to those who shall succeed them. They, therefore, order that this minute be entered in full upon the faculty records, and that, as his death is not only a personal loss to them, but one in which the citizens of Albany have equal interest and common regret, it be published in the daily papers; that the faculty attend his funeral in a body; that the college be draped for thirty days, and that a copy of this minute be transmitted to his sons as an expression of their sympathy with them in the bereavement which they have sustained.

A. VANDER VEER, M. D.,

W. G. TUCKER, M. D.,

Chairman.

Registrar.

Preamble and resolutions of the **Medical Staff of St. Peter's Hospital** on the death of Dr. Thomas Hun:

WHEREAS, It has pleased Almighty God in His wise providence to call from this world our beloved associate and friend, Thomas Hun, M. D.; be it, therefore,

Resolved, That the medical staff of St. Peter's hospital deplores the great loss it has sustained by the death of its senior member, and deeply mourns for its true friend, and its oldest and wisest counsellor.

Resolved, That these preambles and resolutions be sent to the bereaved family, and that a copy of them be published in the daily papers.

HOWARD VAN RENSSELAER, M. D.

DANIEL V. O'LEARY, M. D.

LEWIS BALCH, M. D.

T. KIRK PERRY, M. D.

PATRICK J. KEEGAN, M. D.

The members of the **Medical Staff of the Albany Hospital** desire to record the following minute on the death of our late associate, Dr. Thomas Hun:

Dr. Hun has been closely identified with the Albany hospital for more than half a century, and has always given freely of his unusual talents and wonderful perceptive and contemplative faculties to advance its interests. His personal qualities of mind and heart have endeared him to all his associates, and the medical staff are deeply conscious of the fact that a firm friend of this institution has been removed by his death.

We recognized in Dr. Hun a man of great ability, integrity and worth. In private life he was loved in the family; as a citizen he performed his duty quietly and without strife; as a professor and practitioner of medicine he was courteous, considerate and learned; he was devoted to his church, and his Christian character was without blemish. In all things he was a gentleman.

We desire to have this minute placed on our records as an expression of our sincere regret at the loss we have sustained in the death of Dr. Hun; to have it published in the daily press, and to have a copy sent to his family.

S. H. FREEMAN, M. D.

JOS. LEWI, M. D.

JAS. P. BOYD, M. D.

JOHN BIGELOW, M. D.

JOS. D. CRAIG, M. D.

Albany, N. Y., June 24, 1896.

At a meeting of the **Staff of the Child's Hospital**, held on the 24th instant, the following minute was unanimously adopted:

The staff of the Child's hospital, in view of the loss this institution has sustained by the death of their associate, Dr. Thomas Hun, who, since the foundation of the hospital, twenty-one years ago, has been its consulting physician, and to whose wise counsel and professional skill its prosperity is largely due, desire to place on record their appreciation of the great loss it has sustained in his death.

They desire, also, to express to his family their heartfelt sympathy in this affliction, and direct that a copy of this minute be sent them and published in the daily papers.

C. S. MERRILL, M. D.,

T. M. TREGO, M. D.,

LEWIS BALCH, M. D.,

S. R. MORROW, M. D.,

Committee.

At a special meeting of the **Medical Society of the County of Albany**, held Wednesday, June 24, to take action on the death of Dr. Thomas Hun, the following memorial resolution was ordered entered upon the minutes, transmitted to his family and published in the daily papers:

The members of the Albany County Medical Society have come together to-day to publicly record their profound regret at the announcement of the death of their oldest associate and former president, Dr. Thomas Hun. In him we recognized the earnest and laborious student, the careful, painstaking and successful practitioner; the courteous, resourceful and helpful consultant; the wise, sympathetic and faithful teacher; the noble, upright, Christian gentleman. Though never seeking office or notoriety, he never shrank from any duty that fell to his lot. Though loving peace and harmony, he was ever ready to battle for the right. Liberal in his aid to the poor and needy, he was ever ready to assist with advice and encouragement those who desired to learn. Full of years and of honors, respected and regretted by all, he has passed away.

His entire life was a lesson of high minded devotion to all good things.

SAMUEL B. WARD, M. D.

A. VANDER VEER, M. D.

S. H. FREEMAN, M. D.

A. T. VAN VRANKEN, M. D.

C. S. MERRILL, M. D.

The Board of Trustees of the Corning Foundation for Christian Work in the Diocese of Albany met to attend, as a body, the funeral services of Dr. Thomas Hun, put on record their sense of obligation to him for long-continued service and devotion to the best interests of their work. One of the first named of the trustees, he has been always the generous friend, the wise counsellor and the honored participator in all the efforts by which the work of the board has been established; alike the direction of mercy and of education. He has brought to all our counsels the rare wisdom of his well-balanced mind, his wise experience, his thorough educational furnishing, his distinguished professional ability, and the warm and genial personality of a character which combined the best traditions of that old stock which has given Albany its stability and dignity, with a perpetual freshness of interest in, and sympathy with all the best advantages and advancement of educational and scientific thought. The example of such a life, continued with the unbroken freshness and fulness of spiritual and intellectual force, until it ended peacefully and quietly—as when a laborer lies down to sleep, his work all done—is a source of the deepest gratitude to those who have been permitted to be associated with him in his private life, in his professional labors, and in his official relations to the interests which they have served in common; and will be a perpetual stimulus to the more faithful and energetic support of the good works to which he gave the unfaltering confidence and the unfailing interest of his richest and ripest years.

WILLIAM CROSSWELL DOANE,

T. B. FUCHER,

President.

Secretary.

The Dean and Chapter of the Cathedral of All Saints desire to put on record their sense of loss and feeling of personal sorrow caused by the death of Dr. Thomas Hun, an honored member of the chapter since the foundation of the cathedral.

Rarely is it given to men to combine in so marked a degree all the elements which go to make up a balanced and beautiful character. Learned, austere, virtuous, keen in thought and judicial in temper, yet withal humble and gentle, with the heart of a little child. Dr. Hun's counsel and support have ever been valuable in the furtherance of the church's work in Albany.

To the cathedral the blow comes with special severity, for Dr. Hun's loyalty and love were unwavering and unbounded when once he had pledged them. And yet, in the midst of our grief, we can but rejoice in the rich heritage left us of a noble life singularly rounded

and perfect, an example which, we may trust, has stamped itself deeply on the corporate life of the institution which he served so long and so faithfully.

Resolved, That this record be entered upon the minutes of the chapter, and that a copy thereof be sent to the bereaved family.

WILFORD L. ROBBINS,

Dean.

T. B. FULCHER,

Precentor-Secretary.

June 26, 1896.

The Trustees of the Albany Academy, convened in special session to take action in regard to the death of their revered president, Dr. Thomas Hun, LL. D., direct that the following minute be spread upon their records, and that a copy be transmitted to the family of the deceased:

The trustees of the Albany Academy have rejoiced for many years in the fact that they numbered among the companions of their labors and counsels Dr. Thomas Hun. He has passed beyond their earthly companionship into the reward of his labors; but he has left behind, in the grateful recollection of every member of this board an undying memory. No man ever lived who appreciated more accurately or administered more admirably a trust. To him the sense of responsibility for any duty undertaken for others was as keen as his high standards of honor and his quick conscience. Combining, in very rare degree, the sturdy good sense of his inheritance and a practical knowledge of affairs, with high educational ideas and fresh intellectual energy, he was an ideal counsellor and helper in the various details of the management of the academy. Wide in experience, rich in learning, and with clear and positive convictions, he was ever foremost in all measures that could promote the welfare of the institution which he loved. And while the trustees grieve for his loss and honor his memory, they are proud to hold him up before the minds of the boys and young men of the academy as a model for their imitation, in the zest of the scholarly instincts, in the large and broad range of his intellectual attainments, which added to his professional training and thorough furnishing of a most cultivated mind; and above all, in the solid strength of his exalted character, in which the graces of the Christian life sweetened the unflinching sternness of his morality. Miss him they must, for the mere consciousness of his presence was a witness and power for good. They do not dare to mourn him, except in abundant sympathy with his bereaved family, for they believe that he was "happy in the opportunity of his death" in that he "fell on

sleep" quietly and peacefully, in a good old age, keeping to the end the undimmed brightness of his mind, the unclouded clearness of his spirit, and the undiminished dignity of his noble virtue.

MAURICE E. VIELE,

HENRY P. WARREN,

President pro tem.

Secretary.

At the meeting yesterday afternoon the **State Board of Regents** adopted the following resolution on motion of Regent McKelway, seconded by Vice Chancellor Doane and Regent Vander Veer:

Resolved, That the regents of the university have learned with sorrow of the death of Thomas Hun, M. D., LL. D., of Albany. From 1839 Dr. Hun was officially identified with the Albany Medical College, and for fifty-seven years he was distinguished for service to humanity in the practice, the teaching and the literature of his profession, finely illustrating in every relation of life the qualities of scientific culture, civic manhood and religious character. We respectfully tender our sympathy to his kindred and to his medical brethren in the loss sustained by his death.

Constitution and By-Laws.

Albany Medical College Alumni Association OF GREATER NEW YORK.

CONSTITUTION

OF THE A. M. C. A. A. OF GREATER NEW YORK.

ARTICLE I.

The name of this organization shall be the **ALBANY MEDICAL COLLEGE ALUMNI ASSOCIATION OF GREATER NEW YORK.**

ARTICLE II.

Its object shall be the promotion of friendly and social relations between the members, their intellectual improvement, a respect for our Alma Mater, and the application of the Golden Rule to every day practice.

ARTICLE III.

Any physician of good standing who has graduated from the Albany Medical College is eligible to membership, or who has attended any part or complete course of lectures, or who holds an honorary degree, shall be eligible to Associate membership in this association, and for honorary membership, any person may be elected by two-thirds majority of those present at meeting, but shall not be entitled to vote.

ARTICLE IV.

This organization shall have as its officers and for its government and for the management of its affairs, a President, Vice-President, Secretary, Assistant Secretary, Treasurer, and Board of four Governors—one from Brooklyn, two from New York City, and one from outside these places. The President of the A. M. C. A. A. shall be a member *ex-officio* of the Board of Governors.

ARTICLE V.

The Treasurer shall receive and disburse all moneys of this organization as directed by the officers at any of their meetings, or by the President as he may direct.

BY-LAWS

OF THE A. M. C. A. OF GREATER NEW YORK.

ARTICLE I.

MEETINGS.

SECTION 1.—The annual meeting and banquet of this organization shall be held at a place designated by officers and governors, on the third Thursday in January of each year, at which time officers shall be chosen, but the officers may if necessary change the date of the annual meeting by giving to each member notice of such change, in the manner prescribed in Section 3 of this Article.

SEC. 2.—The plan and scope of this and other meetings shall be fixed and determined by the officers.

SEC. 3.—Special meetings of this organization may be called at any time by the President, Secretary and one Governor, to be held at any place in the City of New York, upon four days' notice of such meeting to each member. Notice of such special meetings shall be given by mailing a notice thereof to each member, and addressed to him at his post-office address appearing upon the books of the organization.

ARTICLE II.

OFFICERS—HOW CHOSEN.

SECTION 1.—At the annual meeting on the third Thursday in January of each year, the President, Vice-President, Secretary, Assistant Secretary and Treasurer shall be elected for one year, and the two Governors for the following two years shall be separately elected. A majority of the votes of those present shall be sufficient to elect an officer. In case of vacancy among the officers, the remaining officers shall fill the vacancy.

ARTICLE III.

POWERS OF OFFICERS.

SECTION 1.—*President*.—The President shall preside at all meetings of the A. M. C. A. A., or meetings of the officers thereof, and shall perform such other duties as he may be directed to perform by the officers, and shall have a general oversight over the business and affairs of this organization.

SEC. 2.—*Vice-President*.—The Vice-President shall, in the absence of the President, preside at all meetings, and shall, when specially authorized thereto in writing by the President or a resolution of the officers, perform such other duties of the President as may be delegated to him.

SEC. 3.—*Secretary*.—The Secretary shall keep a membership book in which shall be entered the names and post-office addresses of the members of this organization. The Secretary shall also keep such other books and perform such other duties as may be required by the officers.

The Assistant Secretary shall act as assistant to the Secretary, and in case of inability of Secretary to be present, shall perform his duties.

SEC. 4.—The officers of the Association shall be called the Executive Committee, and shall meet from time to time for transaction of such business as President and Secretary shall decide.

ARTICLE IV.

AMENDMENTS.

SECTION 1.—This Constitution or these By-Laws may be amended at any annual meeting of the organization by a two-thirds vote of the members present, provided notice of such proposed amendment has been given five days previously, and has been approved by the officers and governors.

SEC. 2.—The initiation fee of this association shall be one dollar (\$1.00) and shall be paid to the Secretary, he in turn paying it to the Treasurer, as soon as collected.

OFFICERS.**1895-96.**

President,

JOHN W. WARNER, M. D.

Vice-President,

HORACE TRACY HANKS, M. D.

Secretary,

WARREN C. SPALDING.

Assistant Secretary,

ROBERT F. MACFARLANE.

Treasurer,

ALLEN FITCH, M. D.

Governors,

JOHN A. CUTTER, M. D.,

L. N. LANEHART, M. D.,

ROBERT E. EIVEY, M. D.,

H. F. C. MULLER, M. D.,

THEOBALD SMITH, M. D., President Albany Medical College Alumni Association. '95, member ex-officio.

Reception Committee,

ALLEN FITCH, M. D.,

EDW. F. QUINLAN, M. D.,

ROBERT E. FIVEY, M. D.,

MEYER L. RHEIN, M. D.,

H. F. C. MULLER, M. D.,

CHAS. H. TERRY, M. D.

MEMBERS.**"M. D." follows each name.**

NAME AND RESIDENCE	GRADU- ATION.	NAME AND RESIDENCE.	GRADU- ATION.
Hall, Edwards, 17 East 66th street	1814	Moore, John, 651 Madison ave	1880
Warner, John W., 107 East 72nd street	1847	Rhein, Nyer L., 104 East 58th street	1880
Holcombe, William F., 54 East 25th street	1849	Ullman, Sabbatti E., 84 Warren street	1880
Burton, R. B., 223 East 48th street	1855	Spalding, Warren C., 273 Lenox avenue	1881
Maben, H. B., Kingston, N. Y	1857	Holmes, George J., New Britain, Conn	1882
Thompson, William H., 7 West 56th street	1859	Marsh, E. F., 466 Ninth street, Brooklyn, N. Y	1882
Hanks, Horace T., 766 Madison avenue	1861	De Lano, F. T., Rockville Centre, L. I., N. Y	1883
Fleming, Walter M., Hotel Imperial	1862	Gardiner, William F., 175 Sixth avenue, Brooklyn, N. Y	1883
Hardenberg, Daniel S., 179 Pacific ave. Jersey City, N. J	1863	Lanehart, L. N., Hempstead, L. I. N. Y	1884
Terry, Charles H., 540 Washington ave., Brooklyn, N. Y	1864	Armstrong, S. E., Rutherford, N. J.	1885
Andrews, R. G., Navesink, N. J	1866	Hasbrouck, Josiah, Kingston, N. Y.	1885
Newcomb, Albert N., 206 West 71st street	1867	Wood, Howard J., 195 Fifty-third Street, Brooklyn, N. Y.	1885
White, J. C., Portchester, N. Y	1866	Cutter, John A., 1054 Boston Road	1886
Quinlan, Edward F., 308 West 20th street	1868	Brooks, Henry S., 155 East 72d Street	1887
Blake, J. A., 322 Jefferson ave., Brooklyn, N. Y	1869	Fivey, Robert E., 155 East 72d Street	1887
Briggs, Solon, 177 Broadway	1869	Muller, Henry F. C., 315 President Street, Brooklyn, N. Y.	1887
Schureman, Irving C., Tom's River, N. J	1869	Van Wert, Charles, 115 West 97th Street	1887
Whiteborne, D. B., Uerona, N. J.	1783	Willard, Thomas H., Metropolitan Life Ins. Co.	1887
Evarts, Herman C., Manhattan State Hospital, Hart's Island	1874	Macfarlane, Robert F., 429 Jackson Street, L. I. City	1888
Groghegan, William, 116 West 63rd street	1874	Stephens, Myron F., Gardner, N. Y.	1888
Myers, S. Oscar, 103 Third ave., Mount Vernon	1874	Loughran, F. W., 991 East 156th Street	1890
Patterson, William F., Chapel Hill, N. J	1875	Droogan, Joseph, Westchester	1891
Stevens, William, 133 West 41st street	1876	Roarke, Frank K., 304 Madison Avenue	1891
Lewi, Maurice J., 78 West 82nd street	1877	Allen, John M., 278 West 110th Street	1895
Peet, Alexander J., 46 West 24th street	1877	Crummey, F. J., 266 West 118th Street	1895
Mambert, A. H., 288 Broadway, Kings- ton, N. Y	1878	Gartner, Charles, 257 Humboldt Street, Brooklyn, N. Y.	1895
Morris, George F., 161 West 87th street	1878	Van Heusen, F. R., City Hospital	1895
Fitch, Allen, 152 West 34th street	1879		
Van Dyck, C. De W., 47 West 93rd street	1879		
Gould, John W., 26 Exchange Place	1880		

ELIGIBLE TO MEMBERSHIP,

"M. D." FOLLOWS EACH NAME.

NAME AND RESIDENCE.	STATE.	NAME AND RESIDENCE.	STATE.
Biggs, George P., New York City	New York	Hoff, J. V. R., U.S.A., Governor's Island, New York	
Bumstead, Charles S., New York City .	New York	Hasbrouck, W. D., Port Ewen	New York
Bliss, Salon F., Brooklyn	New York	La Moore, G. S., Highland	New York
Bliss, William A., Fishkill-on-Hudson .	New York	Moon, Willett W., Brooklyn	New York
Brown, J. B., Tarrytown	New York	Mann, E. F., Broaklyn	New York
Browne, A. L., Cornwall-on-Hudson . .	New Yoik	Peet, William T., New York City	New York
Castle, Frederick A., New York City . .	New York	Palmer, Warren B., Brooklyn	New York
Coburn, Edward B., New York City . . .	New York	Pennington, W. J., Brooklyn	New York
Carr, James, New York City	New York	Powell, R. H., Poughkeepsie	New York
Comfort, John E., New York City . . .	New York	Smith, Theobald, Boston	Massachusetts
Crounse, Frederick, Marine Hospital Service.		Salisbury, J. H., New York City	New York
Collier, P. B., New York City	New York	Snyder, W. W., Stamford	New York
Dorn, John H., New York City	New York	Sadlier, J E, Poughkeepsie	New York
Dumond, C. J., New York City	New York	Schley, F. E., New York City	New York
Dunning, Z. F., Brooklyn	New York	Tuttle, A. L., Bridgeport	Connecticut
De La Montanyea, C., Port Ewen	New Vork	Ten Brink, M., New York City	New York
Edsall, Wm. H., Highland Falls	New York	Van der Poel, S. O., New York City . . .	New York
Eccleston, A. H., Providence	Rhode Island	Van Diense, A., Sayville, L. I.	New York
Freedman, Joseph, New York City . . .	New York	Vosburgh, Benj. F., New York City . .	New York
Friedman, J., New York City	New York	White, J. Raisey, New York City	New York
Fuller, Robert M., New York City . . .	New York	Whipple, G. E., New York City	New York
Gilday, W. C., New York City	New York	Sullivan, J. J., Passaic	New Jersey
Goetchius, H. D., New York City	New York	Lamb, Robert, Matteawan Insane Asylum .	N. Y
Griffin, James M., Brooklyn	New York	De Mundy. J. E, Brooklyn	New York
Gallagher, E. J., Kingston	New York	Pultze, Lee, Stamfordville	New York
Griffin, A. C., New York City	New York	Stanley, J., Jersey City	New Jersey
Hoag, Pierre C., Mahasset, L. I.	New York	Poucher, W , Poughkeepsie	New York

Officers of the Albany County Medical Society Elected at the
Annual Meeting Held May 12th, 1896.

J. D. Craig, President; L. B. Winne, Vice-President; Chas. H. Moore, Secretary; W. H. Happel, Treasurer. Censors: H. Bendell, F. C. Curtis, T. F. C. Van Allen, L. Le Brun, C. F. Theisen. Delegates to New York State Medical Society: J. F. Barker, C. E. Davis, A. MacFarlane, A. G. Root.

Address of Dr. George Henry Fox at the Albany Medical College.

On March 20th, Dr. George Henry Fox, of New York, Professor of Dermatology in the College of Physicians and Surgeons, delivered an address, on the invitation of Dr. Curtis, to the graduating class at the college and the members of the Albert Van der Veer Society, on "Diagnostic Features of Cutaneous Syphilis", illustrating the subject by a large number of lantern slides. Probably there is no collection of photographs of skin diseases equal to the one which Dr. Fox has and is making daily additions to, and he makes it exceedingly valuable, selecting from the large number, in thus graphically presenting a subject which lends itself exceptionally well to this method. He maintained that the cutaneous lesions of syphilis are so characteristic in

appearance that they should be recognized as distinctive by the experienced eye of every physician. To those who saw the series of representations this will be more easy. After the lecture a chance to meet Dr. Fox at an informal reception was given.

The Metric System Bill.—There have been several bills before the present Congress of the United States “to fix the standard of weights and measures by the adoption of the metric system”. Of these several bills the best is the House Bill 7251, reported by chairman representative Charles W. Stone from the Committee on Coinage, Weights and Measures.

The fate of this bill is not yet decided. It ought to pass; but we have little faith in the ability of the House to do so meritorious an act so late in the session when every member is busy splitting rails for the political fences of his party.

Mr. Stone's bill provides that from and after July 1, 1898, all the departments of the Government shall employ the metric system in all business requiring the use of weight or measurement, except in completing the survey of the public lands; that from and after January 1, 1901, the only weights and measures recognized as legal in United States shall be those of the metric system; that the national metric prototype standards of linear measure and weight received by us from the International Metric Bureau shall be the ultimate fundamental standards of the United States; and that in all computations and expressions of equivalents of the now customary units of weight or measure into metric terms, the tables of the law of July 28, 1866 may be lawfully employed.

The bill is brief and simple. As Congress has never passed any law whatever to fix the standard of weights and measures, although required by the constitution to do so; as the customary weights and measures are based upon tradition only, and several of our units have long since been abolished in England whence we borrowed them; and as we have no legalized fundamental material standards, while our Meter and Kilogram have already been for four years our actual ultimate standards, it would seem to be not only reasonable but necessary that Congress should at last fulfil its constitutional duty in this regard.

Every well informed person knows that Congress cannot pass any law to define our weights and measures without adopting new units and standard values differing from the customary and conflicting units. Therefore, whenever a law is passed a change is unavoidable, and it would be supremely absurd to make any other change than that contemplated in Mr. Stone's bill.—*Bulletin of Pharmacy.*

THE Albany : Medical : Annals

REPRESENTING THE

Alumni Association of the Albany Medical College.

HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

VOL. XVII.

JULY, 1896.

No. 7.

On the Death of Dr. Thomas Hun.

On June 23d there passed to his eternal rest the oldest and best known physician in Albany.

At a meeting of the Medical Society of the County of Albany, convened to take action on his death, suitable resolutions were passed, which, together with those of other institutions in Albany, can be found elsewhere in this issue.

Interesting papers on the professional attainments and scientific work of Mr. Hun were read by Doctors Lewi, Freeman, Vander Veer, Ward, Case, Van Rensselaer and Skillicorn. The society also unanimously agreed to attend the funeral in a body.

The personal recollections of the various members formed a beautiful tribute of a long, and well rounded, and honorable career. These papers were spread on the minutes of the Society, and it is greatly to be regretted that their bulk will prevent their being reproduced here.

Beyond the memory of any one present, on account of his great age, Dr. Hun can be looked back upon with honor, and reverence and love. His reputation as a learned and skillful physician extended far beyond his native city, but his personal side could only be fully appreciated by those who were near and dear to him. Quiet, reserve and dignity characterized his outward manner, but when one was permitted to fathom his inner life there was found a nature in the highest degree lovable, even tempered and kindly. No selfish act, no hasty word, and no display of temper ever emanated from him, but, on the contrary, he was the embodiment of a serene and genial disposition. He was a man of few words usually, but when he did speak, all paused to hear, knowing that what he should say would be worth listening to. Many a one here can recall the tactful, helpful way he met the younger men of the profession in consultation, and the relief often afforded through his knowledge and skill in throwing light on trying and

obscure cases. He was distinguished alike for the probity of his character, for his great generosity, and his literary attainments, as well as for his professional success.

By his death the medical profession loses a great teacher, counsellor and safe guide, and the community at large a distinguished and honored citizen.

ANNOTATIONS.

New Method for Localizing Brain-Lesions.—Dr. Robert Cox pointed out that there was need of a more perfect method of locating the important areas of the cerebral cortex on the overlying surface of the scalp, seeing that most, if not all, of the methods generally employed are either limited in their application, while many give rise to error by the use of a standard measure—the inch or the centimeter—for varying surfaces. He thought the method which he was about to describe would be found devoid of these objections. For its use two things were necessary: (1) an instrument which he had invented and called a cerobrographometer, and (2) a diagrammatical map of a hemisphere of the brain, prepared from readings made by the use of the same instrument on the dead body and casts of the brain in situ. The instrument consists entirely of the mechanical device technically known as “lazy tongs,” formed into a circle with two accessory loops, which latter attached to the circle by their ends in such a way that they arch over at right angles to each other. One loop bears the numerals, beginning at each end with 1 and ending in the middle with 10; while the other loop has the letters A and V in consecutive order from before backward, that bearing forming the junction with the circle behind. The map is made on the gnomonic projection, with the radii, or longitudinal lines, marked by letters, and the semicircles, or lines of latitude, by numerals. In using the instrument it is necessary to extend it in all parts and apply it to the head with rivets forming the junction of the lettered loop with the circle in front on the glabella, and the rivet marked V at the other end to the occipital protuberance; then press down the loop between these two points in the middle line, and close the circle around the head on such a plane that the numeral 10 will rest on the lettered band. The instrument is then in position, when to find any given point (say Broca’s lobe) it is only necessary to consult the map or list of indices for the bearings, there given as “C4, left side,” and place the 10 of the numbered loop on the C of the lettered loop, when the numeral 4 will lie over the part. Having thus

shown the simplicity of the method, he proceeded to explain that it is applicable to all sized heads and forms its own unit of measurement for each, thus eliminating the errors due to the use of a standard measure for a varying surface. The two fixed points taken, the glabella and the occipital protuberance, place the circle on that plane considered so important by Professor Fraser as bearing a fixed relation to all important parts of the brain. His opportunities of testing its accuracy were very few, but in those it gave excellent results, while with regard to Rolando's fissure, perfection seems now to have been reached. In conclusion he added that the instrument was simple, compact, durable, and capable of being rendered aseptic by boiling.—*Lancet*.

Asthma.—Frederich P. Harder, of Wakefield, England, has used paraldehyde with good effect in about thirty cases of asthma, including ordinary spasmodic asthma, asthma with epilepsy, with morbis cordis, with renal disease, with chronic bronchitis, and in two cases of asthma with pneumonia. In the majority of the cases relief was rapid and complete, and in the remainder the distress was lessened. The dose employed was 40 to 60 minims (3 to 4 grammes), one dose being usually sufficient, a few cases needing a further dose of 30 to 45 minims (2 to 3 grammes) an hour or so later. The hypnotic action of the drug also is of great service, as in so many cases of asthma the attack comes on in the evening or during the night. He has never observed any untoward action of the drug, but, on the contrary, the breathing has gradually become easy and normal and the pulse steadied and strengthened, the patient falling into a comfortable sleep. A disagreeable feature of the drug is that it scents the breath strongly for about twenty-four hours. A point in dispensing is that the addition of a few drops of alcohol renders paraldehyde perfectly miscible with water; any flavoring tincture can be used for this purpose.—*British Medical Journal*.

One of the Advantages of Being Married.—The women of the state of Missouri are circulating a petition to the governor of the state, requesting that he appoint only married men as resident physicians at the various insane asylums of the state. This is a most extraordinary reflection on the character of the assistant physicians of the Missouri state asylums. We feel sure that the governor will not do so silly a thing as to grant this petition.—*Medical Record*.

Why the Roentgen Rays are Invisible.—X. Dariex and A. de Rochas (*Revue Scientifique*, Feb. 29, 1896), have made some experiments with the view of determining the degree of permeability by the

Roentgen rays, of the transparent media of eye-cornea, aqueous and vitreous humors and crystalline lens. The question was, do these media offer a great resistance to the passage of the rays. It was noted that the index of refraction of the crystalline lens was 1.44 to 1.45 which is in the neighborhood of that of glass (1.52).

The authors made two series of experiments. In the first series, an eye was exposed for twenty minutes to a photographic plate wrapped in four sheets of black paper, the cornea being nearly in contact with the tube. The result was to show only a halo at the periphery of the plate, the eye acting like an opaque screen to intercept the rays.

Again, upon a similar plate, were placed one of the branches of a pair of scissors, a crystalline lens, a piece of muscle of the same thickness of the crystal lens, a cornea and a small piece of wood. The crystalline lens was placed in the center of the ring of the branches of scissors, and in the axis of the tube, hence it received the X-rays directly. After 20 minutes exposure the negative showed the result. The branch of scissors was very opaque, the crystalline lens was only slightly less opaque, the muscle was about the same as the crystalline lens, the cornea was somewhat less opaque while the wood was much less so than the cornea.

In the second series, it was desired to make a comparison, as to the permeability by the X-rays, between the transparent media of the eye and other organic tissues; especially those of the hand.

The photographic plate was covered with five sheets of strong black paper and upon it was placed a fresh eye from the pig. From the eye the membranes-sclerotic, choroid and retina were lifted away from the posterior pole for a distance of 8 to 10 millimeters, so that the X-ray might have to pass through nothing but the transparent media, and the sensitive plate might serve as the retina.

The eye was thus prepared so that one might see through it as through a glass. It was then placed upon the photographic plate, within a triangle formed upon two sides by the middle and ring fingers (the latter bearing a ring) and upon the third side by a rectangle of wood. This piece of wood was 1.50 centimeters high and served to keep the fingers apart.

The plate thus arranged was placed about 8 centimeters from the lower end of the tube, in such a manner that the eye was in the axis of the tube and received the maximum of the rays.

After an exposure of about half an hour, the negative showed while the eye had been exposed more directly than the fingers to the rays, it appeared more opaque than the muscles and other tissues of the fingers but less opaque than the bones and especially than the gold ring.

Besides, a careful examination of the image of the ocular globe as it was projected upon the plate, showed in the center a still darker circle. This indicated without doubt a greater opacity of the central portion of the eye, precisely the portion which is transparent for our vision.

From these observations, the authors conclude that the transparent media of the eye which let the rays of light pass through them so perfectly and instantaneously, are very slightly permeable by the X-rays.—*New York Therapeutic Review*.

The Bertillon System of Identifying Criminals.—The committee appointed by the New York State Medical Association to confer with a similar committee of the Prison Association of New York, on questions connected with criminology and penology, has recommended what is known as the Bertillon system of identification of prisoners for adoption throughout the state. This system not only renders the identification of prisoners absolute, but is of greater scientific value in connection with the study of criminology and anthropology and questions relative thereto.—*Medical Record*.

The Kola Delusion.—A very timely warning is given in *Medicine Moderne* regarding the popular use of extracts of Kola. This article is entitled "The Kola Delusion," and in its discussion the fact is pointed out that increased capacity for work obtained through its employment is temporary and unreliable, like that gained from alcohol and cocain. In truth, the effect produced by every member of this group of drugs, which the author very aptly calls "nerve forcers," in that they abolish the natural sense of weariness and fatigue, is due probably to an obtunding effect upon the nerve centers. That caffene is closely allied to creatin and other tissue poisons which invariably give rise to a loss of energy when they have accumulated in the body, is a further suggestive observation.—*Medical News*.

The Waring Plan for the Disposal of Street Sweepings and Garbage.—The plan proposed by Col. Geo. E. Waring, New York Street Commissioner, for the final disposition of street sweeping and garbage, commends itself at a glance to everybody who has given thought to the subject. His four specifications cover the whole field of operations with scientific clearness and completeness, and no one can doubt that if he is permitted to carry out his ideas, his success in this direction will be as great and satisfactory as it has been in the cleaning of the streets. His present propositions are in fact the culmination of his work, placing the finishing touches upon what all men are agreed in pronouncing the most perfect administration of a municipal department

which this city has ever seen. His recommendations should be regarded in the light of what he has already accomplished. As an expert, his opinion must be accepted as outweighing that of all other persons.

(1) Garbage will be kept separate in such vessels as the board of health may prescribe, and will be collected by special carts.

(2) Ashes and dust (free from paper and other rubbish) will be kept within the house, or in the back yard, in special cans. From these they will be removed in tied bags by the department men, who will stand them on the edge of the sidewalk.

(3) Street dirt will be placed in a bag (carried on a light truck) as fast as it is swept up. When the bag is filled it will be tied and stood on the sidewalk. This system has been in use on Madison avenue since last summer, and is now being extended. The ash carts will move slowly along the streets with enough men attending to throw the bags into them as they pass. Thus, the shoveling of sweepings and the emptyings of receptacles, as well as the standing of receptacles on the streets, and the collecting of sweepings into piles, with their attendant dust, litter, and nuisance, will be forever done away with.

(4) All refuse other than garbage, ashes and dust will be kept within the house until called for by the department "paper carts," which will remove everything the householder wants to get rid of, from an envelope to a mattress or a cooking-stove. These things will be taken to central depots, where everything of salable value will be separated, and all else will be cremated.

When this system is in complete operation not only will the streets be clean, but they will also be tidy. Blowing papers and the dust nuisance will have disappeared. Furthermore, the \$80,000 hitherto received by the city for the privilege of picking bones, bottles, rags, etc., during the trimming of the scows will be replaced by many times that amount received for the much larger quantity of material collected, and collection in much better condition. There are further possibilities as to the use of unsalable paper for pasteboard, the development of steam for power by the burning of refuse, the use of ashes for making brick and concrete work. But concerning these we are not yet in a position to make any public statement.—*Public Opinion*.

New York Consolidated Library.—Dr. John S. Billings, formerly of the United States army, and lately professor of hygiene in the University of Pennsylvania, has been appointed librarian of the New York public library. This library already has over 360,000 volumes and property amounting to several millions.—*Medical Record*.

Percussion of the Heart with the Body Bent Forward.—From a clinical study Gumprecht (*Deutsches Archiv für Klinische Medizin*, b. lv. i, h. 5, 9, p. 491) has found that the absolute cardiac dulness is increased in extent, intensity and resistance, by inclining the body forward during the act of percussion. While the dulness often disappears in the dorsal decubitus as a result of pulmonary emphysema or gastro-intestinal tympanities, it is demonstrable when the body is inclined forward. With the aid of this procedure otherwise unrecognizable hypertrophies of the heart are rendered diagnosticable and especially the left-sided hypertrophies of age masked by pulmonary emphysema, such as those associated with arterio-sclerosis or contracted kidney and less commonly right-sided hypertrophies.—*Medical News*.

A Death Certificate.—This unique specimen of a certificate of death is said by an English contemporary to have been tendered by a native apothecary at an inquest in India: "I think she died or lost her life for want of food or on account of starvation, and perhaps for other things of her comfortables and most probably she died from drowning."—*Medical Record*.

Results of the Antitoxin in St. Louis.—The St. Louis Board of Health made public the results of a trial of antitoxin in 326 cases of diphtheria. Of this number only fifteen cases died, showing a percentage of mortality of 4.6. Both the city of St. Louis and the promoters of antitoxin therapy are to be congratulated upon these excellent results.—*Medical News*.

American Public Health Association.—Secretary's Office, Concord, N. H., June 24, 1896. (Preliminary Circular.) The Twenty-fourth Annual Meeting of the American Public Health Association will be held at Buffalo, N. Y., September 15—18, 1896. The executive Committee have selected the following topics for consideration: 1. The pollution of water-supplies. 2. The disposal of garbage and refuse. 3. Animal diseases and animal food. 4. The nomenclature of diseases and forms of statistics. 5. Protective inoculations in infectious diseases. 6. National health legislation. 7. The cause and prevention of diphtheria. 8. Causes and prevention of infant mortality. 9. Car sanitation. 10. The prevention of the spread of yellow fever. 11. Steamship and steamboat sanitation. 12. The transportation and disposal of the dead. 13. The use of alcoholic drinks from a sanitary standpoint. 14. The centennial of vaccination. 15. The relation of forestry to public health. 16. Transportation of diseased tissues by mail. 17. River conservancy boards of supervision.

Upon all the above subjects special committees have been appointed. Papers will be received upon other sanitary and hygienic subjects also.

Comparative Value of Remedies for Uric Acid.—F. Levison (Ugeskrift for Lager, p. 1, 1896.) has examined the new remedies recommended as solvents for uric acid, not only for concretions of the kidneys, but for the form of uratic deposits in gout. Evidence from literature, as well as his own experience, leads him to the conclusion that neither peperazine, lycetol, nor lysidin had any especial remedial property in this affliction. They combine readily enough with the uric acid to form soluble salts, but when given per os and excreted with the urine they lose that property completely or in greater part. Another new remedy, urocedin, recommended by Mendelsohn, is a combination of nitrate of sodium and sulphate of sodium with small quantities of citrate of lithium and chloride of sodium and is not superior to the citrate of sodium so long in use.

More remarkable results are obtained from urotropin, introduced by Nicolati. This remedy can be taken in a dose of 1 to 2 grammes (15 to 31 grains) a day. It is readily excreted by the kidneys and can be demonstrated by bromine-water, which gives a yellow, crystalline sediment.

Levison states that the urine of a person who had taken 1.5 grammes (24 grains) of urotropin was able to dissolve small quantities of uric acid by passing through a filter covered with 0.50 gramme (7 3-4 grains) of uric acid; when the uric acid was digested for twenty-four hours with the urine containing urotropine, as much as 16 to 18 per cent of it was dissolved. Concretions of uric acid treated with this urine were somewhat diminished in weight, and their surface became uneven and greyish instead of yellow. Still another property is conveyed to the urine by urotropin—it is rendered bactericidal and aseptic. The urine could be held for many days in the thermostat at a temperature of 37° C. (98.6°F.) without becoming foul, even when different cultures of bacteria were added to it, while samples of urine without urotropin fermented and putrefied in a very short time. Urotropin seems thus to be indicated in suppurative diseases of the kidneys and bladder, it must, however, be observed that in one experiment the urine containing urotropin began after some days to precipitate a crystalline sediment of phosphate of lime; if such precipitate took place in the living body it would, of course, be a serious inconvenience in the use of the remedy.—*The Universal Medical Journal*.

Medical Education in Vienna.—Changes are to be introduced into the method of medical education in Vienna. The result will be

that, from beginning to end, it will take a regular student, of average abilities, seven years or more before he is able to practice.—*Medical Record*.

Drugs May Be Sold in Pharmacies Only.—Police Superintendent McKelvey, of Brooklyn, has issued an order calling upon the members of the force to enforce the law prohibiting the sale of drugs or medicines in any store other than a pharmacy. Acting Captain Kripe, of the twenty-sixth precinct, which covers the territory formerly known as Flat-lands, has reported the names of a dozen grocers in his district who sell drugs. These persons will be prosecuted by the Kings County Pharmaceutical Association.—*Medical Record*.

The Frequency of the Fetal Heart Beat in Males and Females.—An idea prevalent among obstetricians that from the frequency of the fetal heart-beats the sex of the child can be foretold is now refuted. This oft-quoted theory seems to have had its origin in about fifty observations made by Frankenhauser, who stated that in male infants in utero the average rate was 124 a minute while in females it was 144. An observation including 1000 cases at full term at Boston Lying-in Hospital has proven the disparity between the heart's action in male and female fetuses to be about 1 1-2 beats. Knowledge obtained by counting the pulse rate is not reliable as data in determining the sex.—*Medical News*.

The Surgical Staff of the Cuban Force.—The New York *Herald* correspondent in Cuba writes that the surgical corps in the Cuban army consists of eighty physicians, distributed among its six different corps. The head of the service is Dr. Joaquin Castillo Duany, surgeon general, a graduate of an American university, and formerly attached to the United States navy, in which capacity he formed part of the crew that started in the Rodgers relief expedition to the Jeanette. When the present revolution broke out he was medical inspector at the Juraque iron mines. He joined the ranks of the Cubans, together with Mr. Kilpatrick, one of the managers, and several of other employees, all Americans. Surgeons in the Cuban army have no limited time of service, receive no pay, acquire no fame or rank. These men, brought up under the refining influences of civilization, abandon their practices, their homes, their families, and start on a gloomy career of hardship and danger, with the possibility of being caught by the Spaniards and shot by the roadside. The surgeons are all provided with first class French instruments and in their operations they always make a lavish and intelligent use of antiseptics, for in Cuba's burning climate tetanus and secondary suppuration set in with astonishing rapidity. Drugs are often hard to obtain, there being no

regular base of supplies. In many cases where mercury, bichloride, iodoform and carbolic acid are unattainable, wounds are sprinkled over with finely powdered burnt coffee, which proves a powerful antiseptic. Fevers are often and successfully treated, in default of quinine, with a decoction of the "condeamor" leaves from creeping plants of valuable febrifuge properties. As alcohol can be had plentifully at any sugar plantation in a reasonably pure state, tinctures of many native plants are constantly prepared which are found effective by previous trials. Chloroform and ether are things unheard of in those wildernesses, and nothing illustrates more graphically the Spartan heroism latent in the Cuban nature than the unflinching way in which they submit in full consciousness to the ominous knife. It is not strange there to see a man light his cigar and look on coolly while his arm or leg is being amputated, just as if it were a matter of no concern to him.—*The Journal of the American Medical Association*.

Medical Fees in Austria.—The country practitioners in Austria complain that the fees which they receive are too small, and one of them has proposed the following scale (the equivalents being given in American money). Office visit, 15c.; first visit to the patient's house, 30c.; subsequent visits, 25c. each; night calls, 60c.; setting a fracture, \$2.25; major surgical operations, such as amputations and the like, from \$6 to \$9; hypodermic injection, 20c.; antitoxin injection, 80c.; bacteriologic examination, 80c. The prizes of the profession do not seem to lie in Austria.—*Medical Record*.

Increase in Lunacy in New York State.—The official annual report of the State Commission in Lunacy for New York shows that on October 1, 1895, there were 20,216 inmates of insane asylums within the state. Of these more than 9000 were in the institutions of New York and Kings counties. The increase of patients in all the asylums had amounted to 1131 during the year then completed.—*Medical News*.

The Etiology and Treatment of Ozaena.—Belfanti and Della Vedova gave the results of their researches on this subject, carried out at the Institute of Serum-therapy, in Milan. They regard the disease as undoubtedly of bacterial origin, and due to a bacillus identical with that of Loeffler in form and characteristics, but differing from it in a great attenuation of virulence, causing only œdemas and moist gangrene at the site of the injections in guinea pigs. The micro-organism is found in the exudate in ozæna, in the depth and on the surface of the diseased mucous membrane, and gives rise to a chemical change in the secretion and to atrophy of the mucous membrane and the bone.

In view of these facts the authors decided to employ the anti-diphtheritic serum in the treatment of the disease, and they give the details of 32 cases, 16 of which were cured, 7 almost cured, 5 improved, and 4 showing slow improvement. The uncured cases are still under treatment, and the authors look for successful results in these also. The method of treatment consisted in making injections of 10 cubic centimetres ($2\frac{1}{2}$ fluidrachms) of antitoxin every two days, or every day, if possible, until about thirty injections had been given, the number varying according to the age, duration of the disease, and local and general reaction of the remedy. The changes produced were: (1) a turgescence and congestion of the diseased mucous membrane, (2) disappearance of the characteristic odor, (3) appearance of fluid exudate, and (4) disappearance of green crusts. These alterations varied as to the time of their manifestation and their intensity. The complications produced during the treatment were neither severe nor dangerous, though the authors recommend suspending the injections until they disappear.

Bozzolo reported two cases treated by him with the 'antitoxine; the first, a girl, 13 years of age, with chronic ozæna of an exceedingly fetid character. The odor entirely disappeared after the fourth injection, but on suspension of the treatment it returned after some time. Three injections were then made and the odor again disappeared. Multiple subcutaneous hemorrhages made it necessary to abandon the treatment. Soon after the girl developed measles. At the time of report the condition of the nasal cavities was excellent. The second case was that of a woman of 43 years, in whom the bad smell disappeared after the fifth injection of serum. She was still under treatment at the time of report.

Gradenigo stated that he had treated sixteen cases of ozæna with the serum. In five of these the bacteriological diagnosis has been made by Balfanti. In all there had been an improvement, though the number of injections had not as yet been sufficient to cause complete cure. One case of purulent ozæna had been particularly benefited. He had noted a specific elective action of the serum upon the diseased mucous membrane.—*La Settimana Medica*.

Medical Annuals.—The time was when semi-annual and annual retrospects and summaries, under various names, of the work of the year had their use and value; but in these days of live medical journals, ably edited, unceasingly scouring the world for items of interest, eager to record everything novel, both in theory and practice, with exchange lists exceeding in number and variety anything which might be collected in any other way, it would surely seem the medical

profession might safely rely upon them, with their voluminous and complete indices, as the most reliable records of each year's work and progress, and more wisely and profitably invest the money which has heretofore been spent upon abstracts, retrospects and annuals of all kinds, in one or more first-class weekly and monthly medical journals. *Medical Record.*

Hereditary Drunkenness.—Professor Pellmann of Bonn university, Germany, has made a special study of hereditary drunkenness. He has taken certain individual cases, a generation or two back, and traced the careers of children, grandchildren and great-grandchildren in all parts of the present German empire until he has been able to present tabulated biographies of the hundreds descended from some original drunkard. The last person whom Professor Pellmann has immortalized thus in medical literature is Frau Ada Jurke. She was born in 1740, and she was a drunkard, a thief and a tramp for the last forty years of her life, which ended in 1800. Her descendants have numbered 834, of whom 709 have been traced in local records from youth to death by Professor Pellmann. Of the 709 he found 106 were born out of wedlock. There were 142 beggars, and 64 more who lived from charity. Of the women, 181 led disreputable lives. There were in this family 76 convicts, 7 of whom were sentenced for murder. In seventy-five years this whole family rolled up a big bill of costs in almshouses, trial courts, prisons and correctional institutions. Professor Pellmann says this bill which the authorities of Germany, and therefore the taxpayers have paid, has been at least 5,000,000 marks, or about \$1,250,000.—*Medical News.*

No More Crying Babies.—HOW INMATES OF A NEW YORK NURSERY ARE FORCED TO HOLD THEIR PEACE.—Though the sound of a baby's crying is never agreeable music even to the most devoted mother, it has been held for centuries that this was an affliction from which there was no escape. It has remained for the very new women who are in charge of a well-known New York nursery to discover that an infant's screams are wholly superfluous in a well-regulated home. This is the method by which discontented babies are persuaded to hold their peace: As soon as a child begins to cry the nurse catches it up, holds it gently and places her hand over its nose and mouth so that it cannot breathe. The crying ceases directly, and the child is allowed to breathe freely again. Should it a second time attempt to scream the same simple and effectual method is applied. This is repeated till the baby imagines that the painful stoppage of the breath is caused by its own effort to scream, and so is careful to keep quiet.

The nurses attest that this regime works to a charm, that the most well-bred quiet is always preserved in the nursery, and that the self-control exhibited by tots of three months old, even when in actual pain and distress, is something remarkable. Roaring will, therefore, be eliminated from the accomplishments of the modern baby.—*Argus.*

READING NOTICES.

Chronic Gastritis of Long Standing, with Periodic Attacks of Migraine.—(*Report of a Case by Geo. A. Curriden, M. D., of Chambersburg, Pa.*)—The herewith reported case is one of double interest, inasmuch as the patient has been under my care for a number of years, and previous to the commencement of the present treatment, I have been unsuccessful in affording much relief or preventing the recurrence of the frequent and periodic attacks of migraine, to which she has been more or less subject to since early womanhood. The cause of which I could not account for more than "a habit long continued," aggravated by gastric catarrh.

The history of the case is briefly as follows: Mrs. A, age 55, since early womanhood has been subject to periodic attacks of migraine at intervals of two, three or four weeks, but seldom free from them for longer intervals.

An attack comes on by general malaise of usually a day's duration, repugnance of food or drink, marked drowsiness, much depression with request for rest and quiet, followed by complete physical prostration, dull frontal headache, which the least noise or disturbance makes the more intense, invariably accompanied by violent and frequent attacks of vomiting and retching, inability to retain any food or nourishment of any kind, retention of bowels, often cold sweats, pulse somewhat slow and weak and small in volume. This condition lasting usually two days, followed by gradual cessation of symptoms.

During the whole period of usually four or five day's duration, she is unable to take nourishment of any kind, remains constantly in bed, and desires only complete rest and quiet. The previous treatment has been so varied and on so many different plans, that I refrain from mentioning them.

Two years ago I was able to prevent an attack for over two months by the use of strychnine in 1-20 grain doses t. i. d. with careful diet and artificial digestive.

In May, 1895, I put her on Charles Marchand's "glycozone" in teaspoonful doses well diluted t. i. d., using this as all other previous remedies experimentally; she commenced to improve much in general health, an unusually good appetite, without the previous distressing symptoms following, a more regular movement of the bowels, freedom from headache, and in every way a decided improvement; this improvement and enjoyment of good health lasted during continuation of above treatment for over three months. Unknown to me she stopped taking the glycozone, thinking herself perfectly well. In a

few weeks had a return attack, milder and devoid of gastric distress. A similar attack two months later, both of which occurred some weeks after stopping the above described treatment, and I might say caused by imprudence in diet.

The conclusion come to in this case is that the headache is sympathetic, that the stomach becomes acutely inflamed by its inability to naturally and properly perform its functions, and responds to the call of nature to unload itself, and thus secure for a time rest, that the use of glycozone has corrected the existing gastritis, and by so doing has removed the primary cause of these many years of suffering.

A Food for Chronic Invalids.—In the treatment of many chronic ailments attended with debility the physician is often confronted with the problem of how to supply the patient with an adequate supply of nourishment without overtaxing the digestive organs. This applies particularly to albuminous foods. It is quite common to meet with chronic invalids who manifest a decided repugnance for meats or milk, or whose digestive organs are unequal to the task of disposing of a sufficient amount of these substances. Under these circumstances it is necessary to resort to supplementary foods, and for this purpose various beef extracts have been administered. To be possessed of actual nutritive value however, such a preparation must contain the albuminous principles in a form that will be readily digested and assimilated, and in a concentrated state, free from undesirable admixtures which would only act as useless ballast. The more recent physiological researches have shown that when given in the form of albumoses, albuminous substances are more rapidly utilized in the system, while the pure peptones are objectionable for many reasons, chief among which are their disagreeable taste, their tendency to irritate the stomach, and produce diarrhoea. This is sufficient to condemn them, and, as a matter of fact, frequent attempts have been made to eliminate them from food products as much as possible. These attempts met with but little success until the introduction of Somatose, which is practically a pure albuminous preparation containing but a trace of peptones. It is tasteless and odorless, which enables it to be added to other foods without impairing their savor. This of itself is a point of importance, since invalids and convalescents, especially children, quickly manifest a distaste for the ordinary beef extracts. That the albuminous elements, the albumoses contained in Somatose are perfectly assimilated is evidenced by the rapid increase in weight and strength observed after its addition to the diet. Experiments with the hematometer have revealed that the addition of Somatose has a pronounced influence in increasing the number of red blood corpuscles, and

this is confirmed by the results of clinical observations. In cases of anæmia and chlorosis in phthisical and in chronic disorders of the intestinal, as ulcer and cancer of the stomach, its restorative effects have been strikingly exhibited. During convalescence from exhausting diseases and as a food for feeble children, it is also a valuable adjunct to the diet.

Renal Lithiasis.—In persons suffering from the uric acid diathesis any condition interfering with the elimination of this substance is apt to lead to its disposition in various tissues of the body, one of its favorite sites being the renal parenchyma. At first these deposits give rise to comparatively slight disturbances, the patient passes more or less gravel in the urine, and perhaps complains of vague pains in the region of the kidneys. These disturbances are more pronounced at times when in consequence of errors of diet there is derangement of the functions of the digestive organs, the stomach, intestines and liver. If the uric acid deposits attain to such a size that their passage along the ureter to the bladder is attended with more or less obstructions the patient suffers from attacks of renal colic. On the other hand, if these masses are so situated in the renal structures that their removal by way of the urinary passages is rendered impossible, their presence is apt to give rise to serious changes in the kidney and necessitate the performance of severe surgical operations. Hence in the earlier stages of renal lithiasis the chief aims of treatment are to prevent the excessive production of uric acid and to keep it soluble and favor its elimination from the system. The first object can be secured—to a certain extent at least—by strict regulation of the diet and by the removal of any existing disorders of the digestive organs, as the relief of constipation, torpor of the liver, etc. Of equal, if not greater importance it is to prevent the deposition of the uric acid by keeping it constantly in a soluble state. For this purpose the patient should take an abundance of water so as to flush out the kidneys, together with some uric acid solvent as piperazine. Careful experiments made by various observers have conclusively demonstrated that this substance has a much more solvent action on uric acid than the lithia salts which have been especially employed for this purpose. The administration of piperazine in the above classes of cases is often promptly followed by a discharge of the gravel and a subsidence of the existing disturbances. and according to many authors it is the best means at hand for the prevention and relief of renal colic. Piperazine-Bayer should be employed in daily amounts of 15 to 20 grains, administered in an abundance of plain or carbonated water.

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Acute Yellow Atrophy of the Liver.*

BY JAMES F. BARKER, M. D.

MR. PRESIDENT AND GENTLEMEN:—

Among the many diseases that we are called to witness in our every day routine of professional life, there is none so rare as Acute Yellow Atrophy of the liver. It is, perhaps, the rarest of all the diseases common to this climate.

Strümpell, in his "Text Book of Medicine", says: "It is so rare that not much over two hundred cases have thus far been reported." Pepper, in his "Theory and Practice", says: "That it is one of the rarest affections of the liver", and again, Thierfelder, in 1878, estimated that about two hundred cases of this disease were referred to at greater or less length in medical literature. It occurs in women rather more frequently than in men, and its presence in pregnancy is noteworthy, especially in the latter half. Frerichs, in his "Diseases of the Liver", says: "Of 31 cases. 9 were males and 22 were females, so that the number of the latter more than double that of the former; of the 22 females one-half were attacked during pregnancy". Showing that more than one-third of all the cases were associated with this condition of the system; a circumstance which points to both sex and pregnancy as a predisposing cause. But, nevertheless, it is a rare affection even in pregnancy, for out of 33,000 cases of pregnancy observed by Spæth, there were but two cases of this complication found.

As regards the period of life that it seems most predisposed to, is between the twentieth and thirtieth year. Cases have been described in children, but the occurrence is so rare that Keating in his cyclopedia of diseases of children, says: "That Acute Yellow Atrophy of the Liver is so rarely observed in children, that it may practically be excluded from their usual diseases". The early history of this disease is somewhat obscure and, as well as its later history, very unsatisfactory.

Vice-President's address delivered before the Albany County Medical Society at the Semi-Annual Meeting, October 8th, 1895.

The first authentic communications on this disease are found in the works of Morgagni. In more ancient literature descriptions of diseases occur which correspond to this disease in their symptoms, but the anatomical proof was wanting or insufficient. It has been accurately known since 1845; having been first described by Rokitansky in that year. He being the first to give an accurate anatomical description of it.

As to its origin, various theories have been proposed to account for it. It has been referred to an excess in the production of bile, to stasis of the bile, to sudden saturation of the hepatic cells with biliary matter contained in the blood of the portal vein.

Budd supposes it to be caused by some special blood poison, of unknown nature, which acts especially on the liver cells. Bright attributes it to a diffuse inflammation of the gland. Frerichs to an exudative process. Strumpell considers it a uniform fatty degeneration of the hepatic cells, affecting the entire parenchyma.

That it is an acute diffuse inflammation of the parenchyma is established by the most recent investigations, but the exciting cause of the inflammation remains unknown. That it is in the nature of a specific morbid poison seems probable, since other organs are simultaneously attacked. Another interesting fact is that sometimes the disease becomes rather more frequent than usual, and endemic; several members of one family being attacked; this favors a view which a majority of the present investigators seem inclined to adopt. This view is suggested not only by the whole course of the disease, but by the pathological appearance and places it in the category of acute infectious diseases, but as to the nature of the infection we know nothing.

Of some of the exciting agencies that precede the outbreak of the disease, may be mentioned: Mental emotions, venereal excesses, syphilitic infection and local miasm. A condition analogous to it is brought about by the action of phosphorus. The disease begins insidiously as a simple catarrh of the stomach and duodenum with a slightly coated tongue, nausea and vomiting, belching, irregular clayey stools and great prostration, slight headache, tenderness of the epigastrium and a slightly yellowish hue of the skin and conjunctiva, which gradually deepens. There is some slight acceleration of the pulse and a slight rise in temperature which are not constant. These are the first and mild symptoms and their duration is not always constant; they may occupy a week or more or a very few hours, and from the appearance of the jaundice to the onset of the more serious

symptoms may be from two hours to two weeks. After the appearance of the jaundice and the beginning of the more serious symptoms, a severe headache comes on with obstinate insomnia, then a rapid rise of temperature and an increased and rapid pulse, the temperature rising to 104° or 106° , and the pulse from 140 to 160; then suddenly the temperature and pulse will fall; these fluctuations are percurial to the disease.

When the cerebral symptoms develop, pulse and temperature become more uniform. Jaundice is constantly present and gradually deepens to a dark bronze. The tongue is coated with a dark brown coat and very dry, the teeth are covered with sordes and the breath is foetid. There is a constant nausea and vomiting of a dark coffee-ground vomit, with pain in the epigastrium and right hypochondrium, pressure over the liver gives great pain. The bowels are constipated at first, followed later by profuse discharge of dark, tarry stools, undoubtedly the result of intestinal hemorrhage. There is more or less hemorrhage from the nose and bleeding from the gums, as well as vomiting of blood; uterine hemorrhages are common, especially in pregnant women.

The urine is usually normal in quantity but yellow in color, acid in reaction and normal specific gravity, at times when we have delirium or coma it is either retained or passed involuntarily. Great changes take place in its composition, Urea is diminished, the phosphate of lime disappears, a quantity of leusin and tyrosin are substituted. It contains bile pigment, albumen and cast-off epithelium stained with bile pigment.

The respiration remains unaffected during the first stage, but in the latter the breathing becomes abnormal, sighing or stertorous. Abnormal conditions of the nervous system are observed in every case, as essential characteristic symptom. In most cases the nervous derangements appear simultaneously with the jaundice. They are ushered in with severe headache, accompanied with irritable temper and restlessness; this is soon followed by delirium, which is usually noisy and raging but occasionally shows itself in the form of quiet, harmless wandering.

They throw themselves about in a restless manner, moaning loudly and from time to time utter an inarticulate cry. Convulsions follow; in some cases they extend over the entire muscular system like those of epilepsy, in others they consist of a general muscular tremor resembling a rigor, while in others they appear as partial twitchings of the muscles of the face, neck or extremities, or in the

form of hiccup and grating and grinding of the teeth. Toward the end of the disease the delirium and convulsion give place to stupor, which in a short time merges into the deepest coma and death, but sometimes death takes place in tetanic spasms. The character of the pupils are not always constant; in some cases they remain normal in size and react with light, while in others they are dilated and immovable. Yellow vision occurs in some cases. These symptoms usually run their course in a few days and the termination is almost invariably fatal.

The structural changes which are found on post-mortem examination to account for the derangement of the functions described, are very diverse, the only constant ones are lesions of the liver and next in order being those of the spleen.

The liver is diminished in size from one-third to one-half, and even in some cases to two-thirds of its normal size; it is diminished in every direction, but especially in its thickness; the gland is completely flattened. The capsule presents an opaque, puckered appearance, the parenchyma is flabby and shrivelled. On section the color is orange-red or yellow, sometimes greenish-yellow; some parts are pale, others dark and congested. Microscopical examination shows varying degrees of degeneration and destruction of the liver cells. The gall duct and gall bladder are generally empty or the latter may contain a little unhealthy bile or gray mucous; they are not obstructed. The spleen is pretty constantly enlarged, as are also the kidneys, the epithelium of the latter being bile stained. The other organs generally show signs of extravasation of blood and ecchymosis, but are otherwise normal. These are some of the symptoms and changes that take place in the disease.

The fact of the disappearance in a few days of one-half or one-third part of the original volume of a large gland abounding in blood, leaving nothing but the blood vessels and connective tissue, and without any alteration in the blood vessels leading to it, has a complete analogy in no other disease.

I have cited these few facts relating to the history and symptoms of this disease for the purpose of asking your attention to a few brief observations of a case in my own practice.

On November 5th, 1893, I was called to see Mrs. A.—Age 22, married, and entering upon her sixth month of pregnancy. She had previously enjoyed good health, with the exception of the usual morning nausea, due to her condition, which at this time had about abated. On November 4th, she noticed a slight jaundice about the

face and eyes, but did not complain of feeling bad, she ate well that day and also slept fairly well that night. The next morning she noticed that the jaundice had increased, not only on the face, but the entire body was tinged, had some yellow vision; but otherwise felt well with the exception of a slight headache. That morning she ate a fair breakfast and retained it. I saw her between 12 and 1 o'clock that day and found her as described. During the afternoon her condition became worse; her headache had increased, followed by nausea and vomiting, she had also an anxious expression and was somewhat restless; jaundice had rapidly increased. Her temperature was 104° and pulse 140; these symptoms increased during the day. I again saw her at 9 p. m., and found her much worse, the matter vomited had changed from a grey fluid to a dark brown color, the restlessness had increased, temperature and pulse remained about the same. There was tenderness in the epigastrium and hypocondrium, and on pressure, great pain over the region of the liver; percussion at this time did not show any marked diminution in the size of the organ.

These symptoms continued during the night, the restlessness and nervousness increasing; she would roll from one side of the bed to the other, moaning and crying, and with a rapid respiration. She continued in this condition until exhausted after which she fell into a restless sleep and slept for some time and on awakening felt and appeared much better. I saw her at 8 o'clock that morning and found her much better. Temperature normal and pulse 90, vomiting and nausea had stopped. She asked for breakfast, which she ate and retained. The jaundice was about the same as during the night. The kidneys were acting well, urine quite yellow in color. She had had three stools which were somewhat clayey in color, but otherwise normal. She rested well during the day and continued to improve and was quite cheerful, restlessness and nervousness had entirely disappeared and the jaundice had diminished, everything looked quite encouraging. During the afternoon she was seen by Dr. James P. Boyd, in consultation, and we were of the opinion that she had passed through the worst, and would undoubtedly recover. During the evening she became again restless and nervous, the nausea and vomiting returned and was of the same black character and very offensive. Headache was again very severe, jaundice again increasing, there was belching and tremor and great prostration. She had several stools of a very dark color; temperature 106° , pulse 160; she gradually grew worse during the night.

At 2 a. m. I found her suffering severe pain and a bloody discharge from the vagina, which on examination showed that she was about to

abort. During the rest of the night she was restless and excited, throwing herself from one side of the bed to the other, moaning and crying, there was twitching of the muscles of the neck and face, grinding of the teeth, delirium and convulsions, temperature and pulse continued the same. Her condition remained the same until the next morning when, at 10 o'clock she was delivered of a dead foetus. After this she became quiet, vomiting and nausea stopped, she passed into a state of stupor, in which condition she lay until 6 p. m., when she became comatose and died five hours later. During the last day there was hemorrhage from the mouth and nose, and profuse discharge of a dark tarry material from the bowels. The pupils during this time were dilated and reacted to the light. The dullness in the hepatic region by degrees completely disappeared with the exception of some slight dullness on the side. Unfortunately the urine was not examined.

Autopsy, 40 hours after death, showed body emaciated, skin deep yellow over entire body, conjunctiva and sclerotic deeply stained. Fat in abdominal walls and muscles stained. The heart was of normal size, and there was numerous ecchymosis beneath the epicardium. The ventricles contained a small quantity of tar-like blood along with a little colorless coagulum. Lungs normal and moderately congested.

The stomach presented a pale mucous membrane without any visible ulceration, it contained a small quantity of a dark, brownish liquid. Numerous ecchymosis were found in the mesentery. The spleen was slightly enlarged, soft and of a pale color. Supra renal capsule and kidneys congested. Uterus contracted and healthy. The liver lay collapsed against the posterior wall of the abdominal cavity, anteriorly it was completely covered by the folds of the small and large intestines; it was very dry and soft; its capsule was puckered and opaque and its margin sharp.

The dimensions of the organ were diminished in every direction and particularly in thickness. The gall bladder contained a small quantity of grey mucous. The tissues of the liver were soft and broke down readily. The cut surface presented a uniform ochre-yellow color and was smooth and shining. The weight had diminished about one-half its normal. Unfortunately the autopsy had been delayed so long after death, for want of consent, that portions of the liver that had been sent to Dr. Van Rensselaer for microscopic examination had undergone decomposition to that extent as to be useless.

The history of this case, the first stages exactly like simple jaundice, the sudden onset of the second stage, the cerebral symptom, behaviour of the pulse, temperature and respiration, hemorrhage and rapid termination, age, sex, all correspond to the clinical history of Acute Yellow Atrophy of the Liver as described in the text books. The result of the autopsy fully sustains our diagnosis.

Membranous Croup.*

BY WILLIAM H. HAPPEL, M. D.

My apology for presenting for consideration a subject that has been so fully discussed in previous papers lies not so much in the fact of any radically new discoveries in the treatment as rather therein that it is a subject of the greatest importance in children practice, and will, therefore, bear repetition.

There is no disease among those to which children are especially subject whose onset is so insidious, whose course is so rapid, and whose ending often so tragic as that of membranous croup. There is, perhaps, no other disease in which an early diagnosis is so important and occasionally so difficult. Often the physician must necessarily be uncertain for a time at least, valuable time which can, perhaps, never be regained. I refer to those cases in which an originally catarrhal laryngitis has become membranous; those cases in which the child, having suffered repeatedly from spasmodic croup, gets an attack of croup that does not yield to the remedies usually employed, and finally develops a case of membranous croup; and those cases in which the membrane, at first in the larynx, or trachea, is slow in spreading to the fauces.

Before going into the nature of the disease let us glance in a brief manner over its history. The word "croup" itself is said to be of Scotch origin. It was first employed by Blair (1713) to signify stenosis, and finally came to be employed specifically in connection with the membranous stenosis of the larynx.

According to another authority, the Scotch call the white membrane found on the tongues of chicks the croup, and in this way by a somewhat far-fetched comparison, membranous affections of the fauces and throat came to be called croup. As for the disease itself, it is not by any means a thoroughly modern one; Hippocrates, Celsus, Galen, all describe a disease which is very like the membranous croup of

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to-day. In 1576 Baillou already speaks with emphasis of the formation of a pseudo-membrane in croup. Many others after him have described the same condition under various names. Villa Real (1611) speaks of it as the morbus suffocans, Fontecha in the same year calls it the Garotillo, Kerr (1752) styles it the morbus strangulatorius.

The first approximately scientific description, however, was published by Francis Home in Edinburgh, 1865, under the title of "An Inquiry into the Nature, Cause and Cure of the Croup." Since then our knowledge of the nature and cause of the disease has vastly increased, thanks to its many investigators, but unfortunately not so our ability to cure.

The disease is to-day known variously as croupous laryngitis, laryngeal diphtheria, fibrous laryngitis, diphtheritic croup, membranous croup and true croup. Some of our latest authors have, however, gone so far as to deny membranous croup the honor of a separate discussion, and include it under the general head of diphtheria, a procedure whose propriety seems to me, at least, extremely doubtful.

Membranous croup consists of an inflammation of the larynx and adjacent parts with the formation of a pseudo-membrane. It is essentially a disease of childhood and occurs most frequently between the ages of 1 and 7 years.

In the United States females are said to be more liable to the disease than males. Abroad, however, the condition is reversed, and in addition race plays an important part, the Jewish children being more liable than those of other parentage. In my own limited experience, embracing twenty-seven cases, the males predominated, being in the ratio of 6-1. Heredity has been claimed by some observers as an important predisposing cause, with some show of proof, but whether the cases cited actually support this view or simply illustrate the possibility of unfortunate coincidences often met by us in practice must be a mooted question.

The organism of diphtheria is no doubt to-day one of the most important, but not, I believe, the most frequent direct cause of membranous croup. It is not the only cause, as some authors would have us suppose. In fact the earlier history of membranous croup in this country points to a cause or to causes entirely distinct and separate from the Klebs-Löffler bacillus as a possible direct exciting cause in many cases of the disease, of which more will be said under the head of pathological changes.

For three-fourths of a century preceding the year 1850 the cases of membranous croup were of a purely local character and presented

none of the characteristics of a septic systemic invasion, such as glandular enlargement, albuminuria, paralysis, nor were they considered contagious. The membrane attacked for the most part the larynx and caused death by stenosis of the upper respiratory tract. During this time faucial diphtheria was not endemic, and it does not seem probable that primary laryngeal diphtheria should have existed without there being present any of the faucial variety. Even after diphtheria became established in this country the records of two large cities, Philadelphia and New York, show at first an overwhelmingly large number of cases of croup as compared with those of diphtheria.

Before leaving this part of my subject it is only just to state that the fact that membranous croup, if always diphtheritic, never or but rarely causes systemic disturbances is explainable by the following fact. I quote the words of Dr. Dillon Brown: "Constitutional symptoms are usually absent, partly on account of the protection afforded by the very numerous mucous glands, and partly on account of the absence of lymphatic glands and the scant supply of lymphatic vessels." Still this does not explain why the membrane found in the fauces with cases of membranous croup, and which I firmly believe in a great many cases occurs primarily in the larynx or trachea, does not, as a rule, cause the constitutional symptoms always following true diphtheria, nor why this membrane in most cases seems simply to lie on the mucous membrane, from which it may easily be dislodged, and does not, like that of true diphtheria, implicate the subjacent tissues, a fact to which many authors have called attention and upon which they lay considerable stress. In my own experience this has been a striking feature, as has also been another which will explain my belief in the non-diphtheritic and laryngeal origin of the disease in many if not in most cases.

The patches were either entirely absent at first in the fauces, or else very sparsely distributed over the surface, while the larynx was dangerously full of membrane, as was evidenced by the fact that the child would cough up large shreds of it either spontaneously or else on the introduction of an O'Dwyer tube. In fact in one case a laryngoscopic examination showed the laryngeal membrane before it was possible to demonstrate any about the tonsils or pharynx. Primary laryngeal diphtheria is, however, conceded by every one to be an extremely rare form of that disease. I might also add that among these twenty-seven cases there were but two that reacted clinically as diphtheria, and these consisted of one that began as faucial diphtheria, with following glandular enlargement and systemic infection as

evinced by fever and albuminuria. On the fourth day the membrane invaded the larynx and death followed within twenty-four hours from asphyxia; and another, following measles that reacted similarly, death following as the result of septicaemia. Measles, exposure to cold, pertussis, irritating inhalations and typhoid fever are mentioned as those of the other causes of the disease. Membranous croup is, however, in the last named disease to be carefully differentiated from cicatricial stenosis due to and following sloughing of the laryngeal cartilages, a thing not so very uncommon in typhoid fever.

The pathological changes occasioned by those forms of membranous croup due to true diphtheria need not be discussed here, as they belong within the scope of a previous paper.

The membrane in the other cases presents, according to Delafield and Prudden, the following characteristics: "It is regularly associated with and is apparently caused by the growth of a streptococcus which in morphological and biological characters seems to be identical with the streptococcus pyogenes and streptococcus erysipelatus." Here we have no doubt the true cause of the majority of the cases of membranous croup, an affection analogous to common follicular tonsilitis, sometimes designated as false or pseudo-diphtheria. This theory will account quite satisfactorily for the fact that the peculiar conditions obtaining in the larynx and trachea are sufficient to protect the system from septic invasion, and that the membrane in the throat shows generally a great deal less disposition to spread and cause septic symptoms than does that of true diphtheria.

Occasionally the staphylococcus pyogenes is also present. The membrane infrequently invades the sub-mucous tissue, although there is always more or less œdema and congestion to be found. This puffing up of the tissues is no doubt fully as fruitful a source of asphyxia in membranous croup as the growth of the membrane itself, and will be referred to again under the head of treatment. For the rest the membrane resembles that of true diphtheria with the difference that the Klebs-Lœffler bacilli are absent. Its appearance is white or grayish white. In texture it is fibrinous; it does not disintegrate in water and swells up when exposed to acetic acid. Abundant migratory white blood corpuscles more or less broken down may be found scattered throughout the mass.

The onset of the disease is gradual and insidious. There is at first a slight huskiness accompanied by a strong, not sonorous but metallic cough. In many cases there are some slight catarrhal symptoms. There may be malaise and anorexia. The fauces are possibly

injected or even contain small patches of membrane, although the patient rarely complains of any pain on deglutition, and may even be unaware of any abnormal sensations about the pharynx. This condition may remain for one to four days. In many cases, however, there are apparently no such warning symptoms, and the physician should, therefore, never fail to examine the throat of every child that is afflicted with a croupy cough most carefully. Even the nares should be examined as far as it may be practical, as there are cases in which the membrane may be seen in the anterior nares, although the fauces show none.

Expectoration is slight or profuse, according to the extent of the inflammation. It is muco-purulent and frequently contains shreds of membrane. Sometimes, more especially though on vomiting, casts of parts of larynx or trachea are ejected.

At first respiration is more frequent than normal. But finally when carbonic acid poisoning occurs with consequent dulling of the respiratory center it becomes slower.

As the case proceeds now without any intervention or an unsuccessful one, hoarseness increases, the cough loses whatever resonance it may have had, and becomes more or less suppressed. Only on very great exertion it still begins as a rough barking cough to end in a high, squeaking falsetto. The number of respirations increases and then appears that most dreaded and most dreadful symptom—dyspnœa.

There is no more distressing sight ever witnessed by the physician in his professional capacity—doubly distressing because of his powerlessness to relieve it—than that of these little unfortunates struggling for air.

In the first stages of the dyspnœa the patient generally desires to be left undisturbed. If reclining he turns his face away from his attendants and resents impatiently any solicitous interference on their part, his whole efforts and attention being centered on accomplishing respiration. As the dyspnœa increases still more he makes instinctively every effort to increase the diameters of the thorax. Sitting up suddenly, fixing the shoulder girdle and throwing back his head, he tries to take the fullest possible inspiration. The face wears a look of deep anxiety and is of a dusky hue. As the want of air becomes more and more urgent the *alæ nasi* rise and fall with every inspiration, the nares remain dilated finally and the mouth also is used for breathing in the vain endeavor to obtain more air. The auxiliary muscles of respiration are now also called upon. With every inspiration the larynx descends well down toward the sternum and the shoulders and upper ribs rise, the supra-clavicular regions and supra-sternal notch recede,

and the xiphoid process and cartilages of the lower ribs are bent inward, leaving a deep furrow at the junction of the thorax and abdomen. The patient has become more and more restless in the meanwhile, demanding to be taken in the arms of first one and then another attendant, to be taken from one room to another, to be laid down in bed, then taken up again. He clutches at his mouth and throat, takes large draughts of water in the hope of obtaining more air, and often struggles frantically, although not being restrained in any way. If one now auscultates the chest he hears a long-drawn, high pitched inspiration of a metallic quality, which is quite different from the low-pitched, hoarse stridor that is at first heard before dyspnoea becomes marked, and is due to the tense swelling of the walls of the larynx and consequent narrowing of the glottis and vocal chink. Respiration is at first short and much more marked than normal. It does not become stridulous until inspiration is markedly so, when both inspiration and expiration are prolonged and of equal length. The frequency of expiration has continued to rise throughout and may now be 32 or over 40 per minute. With it has increased the dyspnoea. The previous dusky or leaden hue of the face has increased until it has given way to cyanosis. The extreme restlessness of the patient is beginning to abate and stupor takes its place. The respirations decrease in frequency as carbonic acid poisoning increases, the respiratory center being dulled. The stupor gradually deepens into coma and death finally ensues preceded perhaps by a convulsion.

In speaking of dyspnoea thus far an inspiratory variety also has been mentioned. There is, however, also an expiratory dyspnoea, which may be briefly noted. This form is due to the detachment of the membrane or a part of it below, which on expiration doubles on itself and so acts as a valve preventing egress of the air to be expired. It is fortunately of somewhat rare occurrence.

The scope of this paper will not permit discussion of the complications of membranous croup that may follow even after the stenosis has been relieved. Attention will be called to one only which frequently follows within a few days, namely broncho-pneumonia. The extension of the disease into the bronchi of larger and smaller caliber is marked by a sudden rise of temperature and an increase in the number and at first in the volume of the heart beats. The distance between the larger and smaller bronchi in the child is relatively small and the extension occurs rapidly. When it reaches its height the pulse becomes feeble and intermittent, which is always of a very unfavorable significance. The respirations are those peculiar to the pneumonia of children. Inspiration is quick and is held momentarily,

then follows expiration, which is prolonged and has the additional quality of being stridulous preceded by a quick groaning or grunting sound, this again followed immediately by inspiration. As the membrane gradually implicates more of the bronchioles a secondary dyspnoea arises which is, if anything, more frightful than the original stenosis dyspnoea. Frequently death from this complication is ushered in by Cheyne-Stokes respiration.

The diagnosis in cases of membranous croup is not difficult if there is any exudate present in the pharynx. But it may be difficult when a case presents itself in which no membrane can be seen in the pharynx or nose. Spasmodic laryngitis often presents some of the characteristics of membranous laryngitis, viz., croupy cough, dyspnoea, anxious expression of the face, cyanosis and some recessions about chest, but with this difference: the cough while croupy is deep and barking, the dyspnoea is not prolonged and progressive. It lasts for about 1-2 minute, then becomes less marked and finally within half an hour or an hour disappears and with it all the symptoms dependent upon it. This, however, never occurs in membranous croup which, while it may remit, never intermits.

There are, however, it must be remembered, cases of spasmodic croup which are prolonged, and in several of these death has followed from thickening of the mucous and submucous layers of the larynx.

The prognosis while always unfavorable still depends in degree on the peculiarity of the type prevalent at the time. There are epidemics, if I may strain the use of the word to this extent, in which the cases are quite amenable to treatment, and the reverse. Again, the prognosis depends to a still greater extent on the particular line of treatment the physician may be allowed to use. Further, the age of the patient plays no inconsiderable role, and lastly, the presence or absence of the organism of diphtheria is very important. The result of cases treated medicinally is most unsatisfactory, about one in ten recovering. The percentage of recoveries after tracheotomy varies with the age, being about $23\frac{1}{2}$ per cent at two years, and increasing to about 40 per cent at ten years. Intubation records about the same number of successes.

Before proceeding to the treatment of the disease, one word concerning prophylaxis. When there is an epidemic of scarletina, measles, follicular sore throat, or even diphtheria, since membranous croup may follow any and all of them, catarrhal symptoms acute or chronic occurring about the nasal and pharyngeal cavities should have our immediate attention. Sprays or douches of some antiseptic agent such as boric acid, borax or listerine should be employed freely. If sus-

picious symptoms such as patches about throat, with or without croup, should arise, the patient should be isolated and a culture made of the organisms present in the throat. If the Klebs-Löffler bacillus is found anti-diphtheritic treatment should be immediately begun, which will not be touched upon in this paper, as it will be fully discussed in following papers. If the symptoms become urgent before the result of the culture is known, it is advisable to give a diagnostic dose of anti-diphtheritic serum and base the treatment on its results. Let me add here that while considerable stress has been laid upon the theory that the presence of the Klebs-Löffler bacillus is diagnostic of true diphtheria, I do not believe that this matter has yet been entirely settled and the final conclusion reached. In the present state of our knowledge, however, it presents a fairly good working theory and may safely be accepted as such.

The number of medicinal remedies that has been employed in this disease is legion, a certain indication of the general futility of this line of treatment. I shall content myself with mentioning the principal ones only. The indication for treatment is to find a remedy that will destroy the membrane, and what is just as important, that will lessen or at least not increase the infiltration. This is best obtained by the use of steam generated by the well-known steam atomizer and conducted under a croup tent with an opening for ventilation on side opposite entrance of steam. When an atomizer is not convenient a tube of some material at hand, or one rapidly made of tin by a neighboring tinsmith, may be placed over the spout of a hot water kettle and the steam conducted under the tent in this way. The steam may be medicated in various ways. Alkalies, which are solvents for mucin and fibrin, e. g. bicarbonate of soda, lime water, or a combination of liq. calcis (z¹) and liq. potas. (mv-x) to Oj of water may be added. With these may be combined a digestive agent as liquid trypsin. Liquid pepsin may also be employed but not in combination with an alkali. Neither ferment shall be employed in powder, as the atomizer will become clogged. Their action is to digest the membrane and render the muco-pus that is particularly viscid in this disease more fluid and thus facilitate expectoration. Lactic acid is also occasionally employed. Balsam, turpentine, thymol and eucalyptol are used in a similar manner.

Calomel internally has justly obtained some reputation in this disease. It is usually given at the beginning of the disease, on the tongue in doses of gr. x-xx. It may be administered several times a day during 3-4 days. If diarrhoea follows its use astringents or opium should be added. The bichloride of mercury has also been employed

but with less success. Both mercurials are always well borne by children, but especially so when suffering from membranous affections of the throat and larynx. In case of the latter salt, the dose is gr. 1-40 repeated hourly, but not for a longer period than 2-3 days. The tr. ferri chlorid. in large doses at intervals of every 2-3 hours is also of use.

Benzoate of sodium has also been recommended in doses of gr. iii-x hourly, together with a local application of the same by the steam atomizer. In addition emetics may be used, but only in selected cases. These remedies should be used in sthenic cases and not in those in which there is depression of the vital powers, nor should they be used too freely even in the former. Sulphate of copper and turpeth mineral, the latter highly recommended by Fordyce Barker, will be found best adapted for use. Some successes have followed this treatment, the membrane being expelled in toto and not re-forming. But in general it is to be regarded simply as a means of relieving proper cases temporarily until a more scientific treatment may be instituted.

Latterly a treatment has come into vogue which of all medicinal treatments has given the best results, and which is a valuable adjuvant to surgical treatment. This is the treatment by sublimed calomel. The procedure is very simple, and for this reason alone highly valuable. The drug may be sublimed on an apparatus, whose cost is very reasonable, and the patient be simply held near the fumes, or else it may be inhaled in a tent or even simply under a blanket, depending on the severity of the disease. When an apparatus can not be obtained the calomel may be poured on an oven shovel full of hot coals, or a shovel or piece of sheet metal may be heated over a lamp and the powder placed upon it and allowed to sublime. No less than gr. x of calomel should be used at least every two hours.

But even when this or any other purely medicinal treatment succeeds, which is rarely indeed, it entails a great deal more anxiety on the patient's family, and what is more important still, a great deal more suffering on the patient than would follow a surgical procedure, to the consideration of which we now come. Fortunately here, while in the medicinal treatment the choice of remedies was almost limitless and the results small, the choice is restricted to two operations, tracheotomy and intubation, and the results are somewhat more encouraging. Of these tracheotomy is by far the older and has to-day a great many staunch supporters. It was first brought forward as an operation for the relief of the dyspnoea and the cure of membranous croup by Trousseau in the first half of this century.

Intubation practically dates from 1880, when Dr. Jos. O'Dwyer, after many experiments and painstaking measurements on the cadaver, invented the laryngeal tube, which with some improvements since made by the inventor, is in use to-day.

Although O'Dwyer's method was invented independently it was not the first attempt at intubation. In 1851 Bouchut of Paris, a contemporary of Trousseau, invented a laryngeal tube, consisting of a hollow truncated metal cone, which could be placed in the larynx by being slipped over a metal male catheter or sound and then wedged in the organ. It was necessary with this tube to attach to it a string, which was allowed to hang out of the mouth and by means of which the tube could be extracted. Bouchut performed his operation in seven cases. The tube was retained well, but I believe the cases were not successful. At least the Academy of Paris investigated the new operation and decided that it was impracticable, and it fell into complete disuse.

To-day, however, intubation has established itself as a legitimate surgical procedure under certain circumstances, but not to the entire exclusion of tracheotomy.

In order to fully comprehend this we must examine the advantages and disadvantages of each. The disadvantages of tracheotomy are briefly these: The use of an anæsthetic in a case that is already receiving less oxygen than normal may result fatally, as may the shock of the operation in young infants. No matter how severe the case, the operation must be a slow one, especially on children with short necks or in fat children. Trained assistance is necessary, which in the case of a poor family, it is often impossible to obtain. A trained nurse is necessary for the after care. The tracheotomy tube by its free end has caused sloughing of the trachial wall upon which it impinged and rupture of one of the large neighboring vessels has followed. This may be obviated, however, by the use of Bell's hooks. The tube must remain in four or five days longer than the laryngeal tube. The air entering the lungs is not warmed and sifted, if I may use that expression, as it is when passing over the turbinated bones. There is a wound that may be the source of some general infection. Finally, it is often done too late on account of the objections of the patient's friends.

On the other hand, its advantages are that when done sufficiently early, as the tube passes in below the larynx it does not crowd any membrane lower down into the air passage than it may be at the time, an advantage that to my mind offsets several of those of its rival operation. If instead of the tracheotomy tube the Bell's hook is used

the trachea may be plugged above the incision with an antiseptic material changed sufficiently often and the downward spread of the membrane stopped. Even lavage of the larynx may be practiced. Food need not be specially prepared for administration, as deglutition is not interfered with.

The advantages of intubation are in brief: No skilled assistants are needed, no high-priced after care. The operation may be done in five seconds after the gag is in position, the relief is immediate; there is no post-anæsthetic depression, no shock. The permission for the operation is usually given sufficiently early to be of service to the patient. The tube does not irritate the larynx very much.

Again, the disadvantages are the possibility of pushing membrane into the trachea. Some children never learn to swallow satisfactorily and food may find its way into the trachea and bronchi. The tube may become blocked up and the child suffocate before the physician arrives, or it may be coughed out and the same result follow.

It will be seen from the short comparison that tracheotomy is the operation of election while intubation is that of necessity. Tracheotomy may be practiced on children over five years old. In those under two years old, because of the difficulty of tracheotomy, intubation should be employed. Between the two ages either may be employed subject to the circumstances of every case. In children over ten and in adults intubation may be safely used.

Among the poor, without regard to age, or when skilled assistance can not be obtained and the case is urgent, intubation is the proper operation.

When should we operate? Intubation should be performed as soon as the diagnosis can be made. With regard to tracheotomy opinions differ. Some operators perform tracheotomy when the dyspnœa begins, others when it becomes urgent, though I believe that the best results have followed an early operation here also.

The after care is important. If there is any suspicion of clogging of the artificial air passages they should be immediately cleaned. In the case of the laryngeal tube it will be necessary to remove and again insert it. The tracheotomy tube may be cleaned by simply inserting a long clean feather and twirling it between the forefinger and thumb. Then necessary stimulants should be given and plenty of food, nor should such medicinal agents as the hot spray, medicated or unmedicated, or sublimed calomel be neglected.

When an intubated patient does not swallow well the liquid food that is ordered, he may be laid across the attendant's knees, face down, and given a nursing bottle with a hose long enough to allow it to rest

on the floor, or else he may recline with the hips elevated and be fed with a spoon or a nursing bottle with a short nipple. In both cases if they succeed the food will, if it does not enter the tube, run out immediately and prevent a fit of coughing or perhaps inhalation into the air passages. When in spite of these precautions the child is unable to swallow, semisolid food should be used.

After the laryngeal tube has remained in the larynx for four or five days it should be removed, but the physician should remain within easy call for several hours. If dyspnoea again comes on and increases until no more air enters the lower lobes of the lung the tube should again be inserted. The dyspnoea in this case is due to the oedematous condition of the walls of the larynx, which being unrestrained after removal of the tube, increases.

The tracheotomy tube should be changed after the second or third day if the case goes on favorably, and about every two or three days after that until the patient can breathe satisfactorily through larynx. While it is in situ the air of the room should be moist and kept at 75° to 77° F. The treatment of complications and sequelæ of the operation can not be entered into because of lack of time.

The operation which presents the greater interest to the general practitioner and will be performed by him a great many more times than the other is intubation. It is not, therefore, amiss to give a few hints to the practitioner contemplating the possibility of performing his first intubation. Be certain that your tube is aseptic, so that you do not introduce a germ into the larynx that is perhaps more virulent than the one already present. Get duplicates of the tubes for the ages of from one to seven years. Be careful when introducing the gag not to wound the gums or to catch the under lip between the lever and the teeth, as the latter, especially because of the pain, makes the child restive and seriously interferes with the operation. It is best to be gentle. If the patient resists, by waiting until he is off his guard or cries, as he very generally does at the sight of the doctor, the gag may be slipped on the teeth of the left side without trouble. Make haste slowly in introducing the tube, so as not to tear the larynx, and work exactly in the median line. When the tube is in position immediately withdraw the introducer and arm it with a duplicate. If the case is very recent and very little membrane is therefore present, the string may be immediately withdrawn. In older cases it should remain for at least twenty minutes to half an hour even if it does cause considerable retching. In choosing a tube it is well to be guided by the gauge, but to a certain extent only. Female children generally need a smaller tube than the male. Again, large well-developed children

sometimes demand a tube much beyond the actual age. If the case is at a considerable distance from you use the largest possible tube, as it will be more surely retained. Before extracting prepare the duplicate tube for immediate insertion. Sometimes after extraction a sudden dyspnœa or even apnœa comes on either due to acute œdema of the larynx, or perhaps more often due to a sudden falling together of the swollen vocal bands, which may become fatal before the tube just extracted can be reinserted.

Finally, if you have reason to think that the larynx and trachea are full of membrane do not perform intubation if it is possible to avoid it. Tracheotomy in this case is the proper operation. If, however, forced by circumstances to intubate, fully inform the parents as to the possible results and accidents, so that no blame for any misadventure may fall upon you.

An Unpopular but Frequented Health Resort.—The superintendent of the London prison of Pentonville claims that it is the healthiest place in England, there having been but nine deaths among twelve thousand prisoners last year.—*Medical Record*.

A Cheap, Healthful Restaurant a Failure.—The cheap restaurant started by the Clark Thread Company of Newark, for the benefit of its employees has been abandoned because the employees failed to patronize it. The restaurant was started last fall, and was run at a loss for seven or eight months. During the winter the patronage was encouraging but when warm weather came the trade diminished. The object of the restaurant was to encourage the operatives, and the girls especially, to eat sustaining and wholesome food prepared in a scientific manner, but the young women resented the absence of crullers, doughnuts and pie, and sneered at the nourishing stews, soups, etc. The prices were very low and the quality of the food was of the best, while there was considerable variety. The absence of pie and cake doomed the enterprise, however. Some practical instruction in physiology in our public schools might avail to correct such mistakes.—*Medical News*.

A Journal of Clinical Skiagraphy.—A serial known as the *Archives of Clinical Skiagraphy* is soon to appear in London, edited by Dr. Sidney Rowland. The first plate will be the osseous system of a child. Others will follow, showing obscure injuries of the bone entering into formation of the knee-joint. The first issue will contain six plates.—*Medical News*.

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ANNOTATIONS.

Medical Results of Late Improvements in the Roentgen X Rays.

—An important improvement has been effected by the General Electrical Company of Berlin in the Roentgen apparatus, and especially in the vacuum tube, so that it is possible to observe peculiarities in the interior of the head and throat, and especially the action of the lungs and heart, by direct inspection with the fluorescent screen. The results were demonstrated before medical men representing the chief European capitals at the recent twenty-fifth surgical congress at Berlin. The screen employed measured about ten inches by eighteen inches, and consisted of small crystals of platinocyanide of barium dusted on to an adherent surface. Although the results obtained are probably capable of further improvement, still they were sufficiently good to indicate the probable value in the very near future of the "X" rays in diagnosing certain conditions. They were, at any rate, far in advance of anything that has yet been achieved. It was thought on the discovery of the "X" rays that a new epoch in diagnosis had been reached. Experience, however, has since shown that the application of the discovery was restricted to the exploration of the extremities in the examination of bony structure and in the search for foreign bodies. The photography of the chest and abdominal cavity by means of the "X" rays has been attended with but small success, at least to be of any value in medical diagnosis. By means, however, of this new tube, which appears to afford the maximum energy in regard to the production of "X" rays, the labor and trouble of photography may be dispensed with, and a direct vision of certain abnormalities of the heart and in the chest may, as was shown in this demonstration, be gained.

The following was among the results shown: When the head was placed between the tube and the screen the thickness of the scalp was

easily visible, the hair not appearing. The light penetrates the cartilages of the nose which are only visible in slight shadows. The frontal cavity and the antrum of Highmore are to be seen as distinctly lighter areas. In the neck are to be seen the shadows of the œsophagus, of the hyoid bone, and the cartilages of the larynx (the last not as distinctly as the hyoid bone), which both in rest and in movement are easily detected. If the light be thrown through the thorax from behind, the screen gives the following picture: In the middle occurs a dark broad stripe, the sternum; on both sides are to be seen horizontal shadows crossing each other, which are plainly the ribs; the lower margin of the thorax is represented by a shadow, the left side of which is pale and thin, but the right side is intensely dark. The picture is still better if the rays be thrown from the front and the screen placed behind, only in this case the vertebræ are seen and not the sternum. The shadow line, which is constantly moved on inspiration and expiration for about three inches, is the diaphragm, and the darker shadow on the right side is the liver and the lighter on the left is the stomach.

This picture shows, further, that the diaphragm and the ribs are situated at a very acute angle with one another. Another big shadow is seen immediately above the diaphragm and in the middle of the thorax. This shadow (that of the heart) consists of an intensely dark central part with a light periphery. This movement of the heart is distinctly visible, principally at the apex, but on close examination the movement of the aorta may be noticed also. The heart shadow and the movement are emphasized after a deep inspiration has been taken. If now the tube and screen be moved downward, the light is thrown through the stomach. The limits of this organ may be well seen, but the definition is far better after it has been distended by the administration of an effervescing mixture.

These results demonstrate pretty conclusively, we think, the possibility in the near future of the X rays becoming a powerful aid in diagnosis coupled with the employment of a fluorescent screen. Already it has been fruitful in not only confirming previous methods of diagnosis, but in affording means of ascertaining with some precision certain symptoms which by methods now employed would not be indicated. The movements of a complex joint, such as the carpus, were clearly seen, and will throw a new light upon surgical anatomy. —*Lancet*.

Rampant Protection for French Physicians.—The *New York Times* is informed that French medical students are angrily complaining that they are crowded out of their own schools by youths from

abroad, and French doctors are even more indignant because these foreigners, instead of going home after acquiring a knowledge of physics and surgery, settle down in France and compete with the native practitioners. Of the six thousand students in the Paris Medical School, it seems that one thousand are aliens, and the proportion is almost as large in provincial institutions, notably at Montpellier, where the students have just held a mass meeting and adopted resolutions in which they declare that "the invasion of foreigners constitutes an obstacle to our studies and a threat for the future." To prove the latter assertion, they point to the fact that already, of every five doctors in France one is foreign born. As a remedy for these evils, Dr. Brouardel, the senior member of the Paris medical faculty, has seriously advised the Minister of Public Instruction to create a new and special medical diploma, which shall not confer upon its owner the right to practice as a doctor in France. This is certainly a most curious condition of affairs. Unfortunately the statistics at hand do not reveal how many of these interlopers are Americans.—*Medical Record*.

Foreign Medical Students in Paris.—Foreigners who are not bachelors of arts or of science or who have not obtained their degree from some approved college are to be excluded from the Paris medical schools, as the laboratories are overcrowded, and even enough subjects for dissection can not be obtained.—*Medical Record*.

Electricity in the Household and Hospital.—Among the numerous applications of electricity, as recently illustrated at the electrical exhibition in New York, is a modern method of producing heat by electricity for household and hospital service, and in such a way as will appeal to many an individual "under the weather" and to the medical profession generally. Advantage is taken of the heating effect produced by the passage of a current of electricity to construct a flexible, fire-proof mat or pad of asbestos, in which are concealed conducting wires, the appliance thus formed being utilized in making the local applications of heat heretofore effected by the hot water-bag, compress, soapstone or brick. It has been the experience of most poor mortals at some time or other to wrestle with the elusive water bottle and suffer under its extremes of temperatures. The device referred to is so simple and effective that after the first "hurry call" the nurse can cease her periodical wanderings after hotter water and the patient be permitted to nurse his pain in peace. It must happen that the beneficial effect of a "local application" is often lost or retarded by

the necessity for frequent renewals of the water bags. The "electrotherm," for that is the name of the new heating pad, necessitates no such changes, and a constant temperature can be maintained indefinitely. In prolonged or acute cases of rheumatism, pneumonia or the good old-fashioned stomach ache, the electrotherm should prove a relief alike to patient, doctor and nurse. All that is necessary is to connect the flexible cord which accompanies each pad to the ordinary electric fixture and regulate the temperature by a simple little switch provided for the purpose. We understand that the electrotherm has supplanted older means in many instances, and has most satisfactorily proved its efficiency and convenience. Ordinarily it is furnished with a felt or flannel cover, in which form it is suitable for many purposes, and it is also covered with rattan for use as a foot warmer, for warming beds, dishes and food. It is such a clean, convenient and sensible device that we may soon expect to find it in all households so fortunate as to be provided with electric service.—*American Electrician*.

Medical Education in Vienna.—Changes are to be introduced into the methods of medical education in Vienna. The result will be that, from beginning to end, it will take a regular student of average abilities seven years or more before he is able to practice.—*Medical Record*.

Antitoxine Treatment in 805 Cases of Diphtheria.—The department of health of the city of Chicago has recently issued a report of the results of antitoxine treatment in 805 cases of true diphtheria. Sixty-one cases were injected on the first day of the disease and all recovered. On the second day 187 were treated with a death rate of only 1.60. On the third day 372 cases, with a death rate of 2.68. Of those treated on the fourth day 15.60 per cent were fatal, while of those treated later than this 28.94 per cent died. The average mortality of the 805 cases was 6.46. The death rate under antitoxine treatment, including cases not bacterially proved, making altogether 1,047 cases, was 8.93 per cent. It is certain from this report that antitoxine reduced the death rate from diphtheria during the recent epidemic in Chicago from 50 per cent to less than 10 per cent. The report is one of the strongest in favor of the antitoxine treatment which has yet appeared.—*National Medical Review*.

Depilatory Action of the "X" Rays.—Prof. John Daniel of Vanderbilt university writes in *Science* that, being asked to undertake the location of a bullet in the head of a child, he and Dr. W. L. Dudley decided to make a preliminary test of photographing through the head with their rather weak apparatus before undertaking the

surgical case. Dr. Dudley lent himself to the experiment, and a plate holder containing the sensitive plate was tied to one side of his head, with a coin between the plate and his head, and the tube was set playing on the opposite side of his head. The tube was about one-half inch distant from his hair, and the exposure was one hour. The plate developed nothing; but twenty-one days after the experiment all the hair came out over the space under the "X" ray discharge. The bald spot was two inches in diameter, which was exactly the size of the "X" ray field close to this tube. The skin looked perfectly healthy, and there had been no pain nor other indication of disorder. Professor Daniel thinks this incident may possibly be confirmatory of one theory which has been offered as to the nature of the "X" ray. The suggestion, beginning with Professor Roentgen himself, has been more than once made that they are longitudinal rather than transverse vibrations. It is difficult to distinguish a longitudinal displacement of the ether from an electric current, as far as it goes. A well-known method of depilation is that by electrolysis, or sending a current to the roots of the hair by a needle. If any such quasi-electric current has resulted from the "X" rays, the effect upon the hair might be thus accounted for. The intensity of the discharge in this case was not sufficient to heat the tube except very slightly; and the occasional small electrostatic spark from the surface of the tube to the hair, but which was hardly noticeable, would also, the writer thinks, not account for this effect.—*Medical Record*.

Foreign Comment on Tuberculosis and Tuberculin—Switzerland.—At the recent international veterinary congress held at Berne there was a very interesting discussion as to the use of tuberculin to diagnose the presence of tuberculosis. The weight of evidence was so much in favor of the use of tuberculin that the vote of the congress was almost unanimous.

Professor Nocard has himself injected tuberculin under the skin of 3,000 cows, and on only two occasions did it fail; but these failures were in cows with the disease far advanced. It is, however, to his credit, that the French government has passed an act to prohibit the sale of all milch cows that will not pass the test, while at the same time to secure their isolation if already among a shed filled with animals, and to ultimately have them slaughtered. M. Bang of Denmark produced the certificates of 45,000 cases of successful injections, with but a few failures due to the chronic stage of tuberculosis. M. Bang made the following statement: "In his country, Denmark, the national industry was the production of milk; it was also, unhappily,

the country where tuberculosis most existed. Since 1893 the Danish government fought against the malady; now, since the application of tuberculin, out of 45,905 animals operated upon, 18,399 were declared diseased—40 per cent of the whole.—*Veterinary Magazine*.

The Misuse of Drugs.—It is gratifying to find so powerful a journal as the New York Tribune raising its voice in reprobation of the widespread practice of self-drugging among the lay public. People who are utterly ignorant of physiology, of the various organs on which drugs bring their action to bear, or of the disaster which may follow an excessive dose or the prolonged use of the given agent, not only “treat” their own ailments but impose their amateur prescriptions on every ailing friend. Many medicines may be taken freely by those possessing ordinary common sense, but a vast number should never be taken save under expert medical advice. Self-drugging is not only leading to baneful drug habits, but has actually proved fatal in a number of instances through overdosing.

The human organism is a delicate and complicated machine and many dabblers in physic who would shrink from repairing a typewriter or tinkering a bicycle flatter themselves that they can correct the disorders of the finest piece of mechanism yet evolved by nature or art.—*Bulletin Pharmacy*.

A School of Medicine for Women, at St. Petersburg, has already an annual grant of \$50,000 from the government and of \$12,000 from the city, while from private sources the sum of \$360,000 has been raised. With this money there certainly should be established an excellent medical school for women.—*Medical Record*.

The Second Pan-American Medical Congress will meet in the City of Mexico, November 16th, 17th, 18th and 19th, 1896. Our readers will have noticed mention of this gathering of the medical men from the United States and South America countries, and that there has been manifest an earnest feeling in favor of making it a success. The different sections are thoroughly organized and thoroughly at work. The number of papers promised are already sufficient to ensure success from a scientific standpoint. The time of year for visiting Mexico is said to be the most beautiful that could have been selected. The arrangements offered by the railroad companies are such as to make the trip very enticing. The rates will be reduced so as to make the trip a very reasonable one, and those who feel disposed to take a run on to California will have every advantage offered them for doing so. Members desiring to take their families have the opportunity of doing so and can learn all particulars by Addressing Dr. C. A. L. Reed, Sec., St. Leger's Place, Cincinnati, Ohio.

The following members expect to attend from this city: Drs. C. S. Merrill, Jas. P. Boyd, F. C. Curtis and A. Vander Veer.

"Knockout Drops," so-called, and such as are mixed with liquors to produce a stupefying affect, are said to be composed of chloral hydrate in the proportion of ten grains of the drug to a teaspoonful of water and can be purchased at many drug stores without a physician's prescription, as shown by a reporter of the "New York Sunday Journal."—*Medical Record*.

The Lungs of One of Koch's Earliest Tuberculin Patients.—The appearances found at the autopsy of a Finnish patient who was one of the first to undergo tuberculin treatment at the hands of Professor Koch, in Berlin, are reported by Adami, in the *Montreal Medical Journal* for September, 1895.

The patient was a highly intelligent man, thirty-three years old, who was treated by Professor Koch at the Victoria Hospital in Berlin for fifty-two weeks in 1890. He had been suffering from hemoptysis, night-sweats and progressive emaciation. Marked improvement took place under the treatment; and his health was apparently restored. In June, 1893, he came to Canada, where he was employed as a skilled mechanic in the engineering laboratory of McGill University, and remained apparently in perfect health until January of the present year, when his cough, night sweats, etc., returned. He was seized with severe and recurrent hemorrhages, from the effects of which he died on April 18th. At the autopsy firm adhesions were found at both apices, with extensive fibroid changes, together with well encapsulated caseous masses and small contracted cavities with dense envelopes. These changes were undoubtedly signs of the arrest of a fairly extensive tuberculous process which was coincident with the treatment by tuberculin in 1890 or 1891. That the process had only been arrested and not cured, was evident by the lesions, which were distributed through the remainder of the lungs, which consisted of rather large miliary tubercles, broncho-pneumonic in their distribution, together with a large cavity, in the walls of which was found the eroded artery, which had been the source of the hemorrhage. The fact that the recent tubercles were most numerous in the vicinity of the old disturbance makes it almost certain that the second attack of tuberculosis was not a second fresh infection, but a lighting-up of the trouble in one of the old foci, spread by dissemination through the air-passages.

The interesting point about the case is the fact that a tuberculous process as extensive as was indicated by caseation, tubercular pleurisy, and the formation of five or six cavities at the apices had been arrested for four years by a year's treatment in the Berlin hospital.

Intra-Uterine Photography by Roentgen's Rays.—Professor Pinard presented in the name of Mm. Carnier, Chappuia, Chauvel, and Func-Bretano, a note stating a foetus in utero that had been preserved in alcohol for a long time had been successfully photographed by the X rays. The uterus had been taken post-mortem in 1894, from a woman who had died of pernicious anæmia when three and one-half months pregnant. The specimen measured six centimetres in its thickest portion, and this was transversed by the rays. The photograph showed a silhouette of the body of the uterus with its appendages and the muscular wall; in this dark back-ground the uterine-cavity stood out clear, with the silhouette of the foetus agglutinated to the wall above and to the front.

It thus appears that the double wall of a gravid uterus, hardened by alcohol, can be traversed—the bladder, placenta, rectum, etc.—by these rays, permitting the hope that similar results will be possible in the case of the fresh uterine wall still full of blood.—*La Semaine Médicale*, March 11, 1896.

Aluminum for Cooking Utensils.—A scientific investigation was recently undertaken by the Imperial German Health Bureau to inquire into the suitability of the use of aluminum for cooking-utensils. It was proven that this metal is entirely free from communicating to food any poisonous salt, such as is given off by copper, tin, or lead.—*Medical Record*.

Numerous Names for Roentgen's Discovery.—Among the many names used to designate the discovery of Professor Roentgen are the following: "X" ray photography, shadowgraphy, radiography, cathode photography, cathography, electrography, fluorography, skia-graphy, skotography and Roentography.—*American Medical and Surgical Bulletin*.

Origin of the Cocktail.—The most remarkable explanation of the origin of the word "cocktail", according to the New York Press, comes from an ancient print. The old doctors had a practice of treating certain diseases of the throat with a pleasant liquor, applied with the tip end of a long feather plucked from a cock's tail. They finally began to use this preparation as a gargle, and the name cocktail clung to it. The gargle gave way to an appetizer, to a mixture of bitters, vermouth, and liquor that is still in occasional demand.—*Medical Record*.

Oxygen After Ether.—Dr. Theophilus Parvin writes in the Medical and Surgical Reporter, April 4, 1896, on the use of oxygen after ether. He says that, having observed the practice of Dr. Landau, of

Berlin, who has his patients inhale pure oxygen after the ether has been withdrawn, he is convinced that the practice is a most useful and valuable one. He says the immediate effects of inhaling oxygen are: the dusky hue of the face disappears, and the pulse becomes fuller and slower; there is also a more rapid recovery of consciousness. In the day subsequent to the operation he several times visited these patients at the physician's request, asking them as to the freedom from vomiting and pain, and the invariable reply was that they had neither. Some cases treated in this way at Philadelphia made similar statements in regard to their experience of its effects.—*Medicine*.

Sequel to the Langerhaus Case.—After a long delay the official report on the postmortem examination in the case of the child of Professor Langerhaus, who died suddenly after an injection of diphtheria antitoxin, has been published in the *Berliner Klinische Wochenschrift*. The Berlin correspondent on the *London Lancet* (June 20) says the examination was performed by Prof. Strassman and Dr. Mittenzweig, medical officers to the British Courts. The report states previous to the fatal injection the child had taken its dinner followed shortly afterward by some milk and cake. Death took place during a fit of coughing, and the necropsy showed that the trachea and bronchi were entirely filled with a gray substance, which was proved by microscopic examination to consist of particles of food, a good deal of the same being still present in the stomach. The uvula was swollen. The medical experts, therefore, declare that the child died from suffocation. They are of opinion that the boy vomited after the injection and that, being in fainting state from the pain of the injection, he was not able to get rid of the vomited matter, but drew it into his larynx in the act of inspiration. They did not find any embolus of air in the pulmonary artery, as was suggested, nor was there any confirmation of the opinion that death had occurred from syncope. They therefore advised the court not to hold anyone responsible for the child's death. According to the statement of the central office, the serum was of normal quality and the injection was, in the official opinion, justified by the present state of medical knowledge.—*Journal of the American Medical Association*.

Medical Longevity.—Rare opportunities, together with a predilection for such investigation, has allowed Dr. Salzmann, of Esslingen, to present us with some reliable and quite interesting figures relative to the average length of life among medical men. During the sixteenth century he found it to be only thirty-six years and seven months; in the seventeenth century, forty-five years and eight months; in the

eighteenth century it reached forty-nine years and eight months; while the present century, fifty six years and seven months. The addition of twenty years to the average life of the physician has been the result of advancing scientific knowledge both as relates to prevention and cure.—*Medical News*.

To Drive Away Flies.—Dr. H. S. Baketel, of Derry, N. H., writes: “Many practioners of medicine among the poorer classes are greatly anoyed by flies in the sick room. The annoyance to the patient is doubly great. Such, at least, was my experience not long since on New York’s great east side. An excellent safeguard against these pests is the sweet-pea flower. The *Lathyrus maritimus*, the purple variety, grows near the sea-coast from New Jersey around to Oregon, and beside the coasts of the great lakes. The *Lathyrus ochroleucus* is found on the hillsides from New England to Minnesota, and even further west. It is distinguished by its small, yellowish-white flower. Either of these varieties can be grown in the sick-room, and the sweet odor emanated seems very offensive to the ordinary house fly.—*Medical Record*.

Exact Dosage in Exercise.—Housework, chores, gardening, walking, climbing, cycling, running, swimming, and many other sports give just the kind of exercise that is indicated in certain conditions, due regard being had to the physiological effects of varying dosage. Oertel has shown how the simple exercise of walking may be adapted to sufferers from cardiac debility by prescribing the distance and speed and the number and length of the rests on definite paths graduated according to their slope. His interesting and original work has not only given a new direction to the treatment of certain cardiac affections, but is destined to have an important influence in establishing accuracy in the prescription of exercise. Whoever has studied the map of the environs of Reichenhall, Bavaria, prepared by Oertel for the application of his method, will acquire a vivid idea of what precision of dosing in exercise means. In this map the different paths suitable for the work are marked in four different colors, to indicate those that are nearly level, those slightly sloping, moderately sloping, and steep, and figures are placed along each route to show the space that should be traversed in each quarter-hour. The locality itself is prepared for its remedial use by placing benches for resting at suitable distances, and by marking on certain trees near the path circles colored to correspond with the map, to indicate the difficulty of that particular section. By systematic practice on the easier paths heart and system are progressively trained and strengthened. Intelligent analysis may do the same

work for cycling, horseback riding, and many other familiar exercises. In this way the dosage is practically reduced to a definite number of kilogrammetres in a given time, and a step has been taken in placing the prescription of exercise upon a scientific basis.—*Popular Science Monthly*.

A Use for Patent Medicine Literature.—It is a favorite axiom of the optimist that everything has its uses. But it has remained for the New Mexico Territorial Board of Health to find a use for the patent medicine almanac. In a recently issued circular on the prevention of consumption, among other things it is advised that “every person so effected should spit into some receptacle and should see that the sputum is soon destroyed by fire. About the house there is no better way than to spit between the leaves of the patent medicine almanac—to be had freely at all drug stores—and after a half dozen or more spittings burn the book.—*The Journal of the American Medical Journal*.

A Rapid Method of Filtering.—Sink a tightly fitting pledget of absorbent cotton about one inch (2.5 cm) from mouth of test tube; fill the space above the urine or fluid to be filtered; place the opposite end of tube in running hot water, or water ranging between 120° and 150° F. (50° to 60° C.) or heat a tube with a gas or alcohol flame. The result will be that the heated air in the tube will rise—following the law of the expansion of gases—which is manifested by the appearance of bubbles on top of the fluid layer. As soon as this is observed submerge the bottom or heated portion of the tube into water ranging between 40° and 70° F. (5° to 20° C.). The result is manifested immediately by the disappearance of the layer of fluid from the top, and its appearance in the bottom of the tube. This process may be continued indefinitely until the necessary quantity of urine or fluid is collected. The latter action is the result of suction, produced by the elasticity of the atmosphere and its pressure in refilling the partial vacuum.

This method is especially useful in the chemical examination of urine containing pus, and could be also used in making a rough estimate of solids held in suspension.—*Medical News*.

Fraudulent “American” Potted Meats Made in Europe.—According to the Program Medical of May 2, there are at Rotterdam and Antwerp large and important factories which import worn out omnibus horses from London and make the horses up into excellent potted meats, labeled as if they came from America, and widely sold all over Europe. They dispose of 26,000 horses a year.—*The Journal of the American Medical Association*.

READING NOTICES.

Senfft: The Action of Lactophenin.—(*Weiner Med. Presse*, 1896, No. 50).—The author reports a large experience with this drug in the treatment of children. He has used it as an antipyretic in pneumonia, bronchitis, typhoid fever and diphtheria. It reduces the temperature promptly, and he reports no untoward effect on the stomach or depressing effects on the heart. Because of the last named advantage he has substituted it largely for other antipyretics for children. To infants of one year he gives three-fourths of a grain; at four years he gives one-fifth of the adult dose.—*Archives of Pediatrics*, June, 1896.

The addition of potassium iodide is frequently useful, especially if there has been a history of specific infection.

The following letter, from Mavrogeny Pacha, Physician-in-chief to His Majesty the Sultan, is but one of many to show the esteem in which distinguished physicians hold the well-known tonic wine "VIN MARIANI".

"Constantinople, July 2d, 1895.

"Sworn enemy of the proprietary medicines which have of late years inundated all countries, and whose only object is the acquisition of gain for the proprietors, without the least benefit to science nor to humanity, I make a single exception in favor of one preparation as meritorious, and which is thoroughly praiseworthy. I refer to "VIN MARIANI", which, without guise of deceit and mysticism, is valuable in its fortifying qualities, and has conferred high benefits upon weak and suffering humanity.

"(Signed) MAVROGENY Pacha,

"Physician-in-chief to His Majesty the Sultan."

During the past thirty-five years "VIN MARIANI" has gained more ardent admirers among the medical profession throughout the world than any other preparation, and justly so, as there has never been a disappointment from its use. This is specially noteworthy on account of the attacks made from time to time against Coca (generally from interested parties), and on investigation it is shown that the many so-called Coca wines are nothing more than shameful mixtures of cheapest, inferior wines, and variable solution of Cocaine unscrupulously sold as Coca wine, simply for mercenary purposes.

It is in this manner that really useful drugs are brought into discredit.

M. Mariani has gathered the written opinion, clinical notes, etc., of many thousand physicians from all parts of the world, showing the universal high opinion of practitioners who have subjected "VIN MARIANI" to thorough test.

Treatment of Venereal Lesions.—The value of iodine as a disinfectant was recognized long before the inauguration of the antiseptic era of wound treatment. But it was not until this period that efforts were made to synthetically prepare substances, which when brought in contact with a wound surface would yield up their iodine in small amounts so as to exert a constant germicidal action. Iodoform was the first iodine derivative brought before the profession and in many respects it has held its own. Of late, however, attention has been quite frequently drawn to the fact that this substance sometimes gives rise to irritant and even toxic effects. Aside from this its tell-tale odor is objected to by many patients, and is equally objectionable to many physicians. The desirability of securing an iodine derivative devoid of these unpleasant properties, yet as efficient as iodoform, is, therefore, fully apparent. Europhen has been found by many competent observers to possess all the advantages of its malodorous rival, while completely free from its disadvantages. In the treatment of venereal diseases Europhen has proved to be of especial value. That extremely common affection, chancroid, rapidly yields to its antiseptic and cicatrisant properties. If dusted on the sore after cleansing with a mild carbolized solution, healing progresses with great rapidity, and it will rarely be necessary to resort to the use of caustics. It has also been claimed that under its use buboes are seldom developed. If they form, however, and undergo suppuration, the application of Europhen to the cavity after evacuation of pus and curettage (when required) will be found to induce rapid healing. For the treatment of other venereal lesions as ulcerating chancres, condylomata, ulcerating secondary and tertiary syphilides, Europhen has also shown itself to be a very efficient and agreeable remedy which is perfectly unirritating and free from poisonous qualities.

Obesity and Rheumatism in Summer.—The heavyweight, of all others, has just cause for complaint in hot weather. The summer months with their excessive heat, by producing free diaphoresis, tend somewhat to reduce the weight, but the lethargy and vital depression incident to this season, on the other hand, limit the normal amount of exercise, and thereby tend to offset this effect. At this season of the year the fat person suffers. His condition predisposes him to rheumatism and gout. For such people PHYTOLINE is a boon. Aside from its fat absorbing and eliminating qualities it meets his rheumatic and gouty symptoms as nothing else does. Recent experience shows that PHYTOLINE, combined with Salicylate, with or without the addition of potassium iodide, as the case may require, is unexcelled in this condition. A reliable formula is the following:

PHYTOLINE,	-	-	-	-	-	2 oz.
Sodi Salicylatis,	-	-	-	-	-	2 oz.
Aquæ Destillatæ,	-	-	-	-	-	6 oz.

M. Sig.: A teaspoonful every three hours.

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Pathology of Diphtheria and Kindred Throat Affections.*

BY CLEMENT F. THEISEN, M. D.,

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As George M. Sternberg, in an article entitled “The Proofs of Progress” says: “The great obstacle to the advance of medical science in the past has been respect for authority and the acceptance of theories and supposed facts without submitting them to the test of experimental verification.”

Since the improvements in the microscope, however, all this has been changed and particularly in pathology and bacteriology have enormous advances been made. It was formerly supposed by Hueter that the causes for all pathological changes were low forms of life which he called monads, and that the nature of the disease depended on the organ or tissues into which these bacteria wandered. Bilroth and Lister at first also held these views. Even after the discovery of the microscope in the 17th century, it was thought that the cause for various infectious diseases were low forms of vegetable or animal life. Kircher, a Jesuit priest, claimed to have seen these organisms in the blood. After the microscope was improved by the addition of achromatic and high power lenses, and particularly owing to the influence of Rokitansky and his school, the study of pathology was revolutionized. Thus it followed that the exact study of the morbid processes that take place in the tissues during disease and the improved methods of staining led to the search for the specific organisms that produced these changes, and as a result, the pathogenic bacilli causing Pneumonia (Fränkell, 1886), Malaria (Laveran, 1880), Typhoid (Koch and Eberth), Influenza (Pfeiffer, 1892), Asiatic Cholera (Koch, 1883), Diphtheria (Löffler, 1884), Actinomycosis (Israel, 1882), Tuberculosis (Koch, 1882), were discovered and could be distinguished from each other.

*Read before the Albany County Medical Society, Jan. 16, 1896.

Since the very important disclosures were made by Behring of his antitoxin the whole question of Diphtheria has again been reviewed and a great amount of literature written on the subject. Particularly between the Pathologists and Bacteriologists it has given rise to lively debates and much confusion.

In this paper I have confined myself to the gross and minute pathological changes that take place in the throat in Diphtheria, and some of the throat affections which may occasionally be taken for Diphtheria, such as Follicular Tonsilitis, Sore Throat of Scarlet Fever and Measles, Croup, Pseudo Croup, Etc. It would have taken too much time to have gone into the pathology of the heart, kidneys and other organs and then clinically certainly the early recognition of the disease by particularly its pathological characteristics in the throat is of greater importance to the Physician. Considering Diphtheria from a strictly pathological standpoint, it would be better, as Virchow says, to leave out of account entirely the etiological factors in the production of the morbid changes, as otherwise an article on the pathology of any subject in order to be complete would have to include the whole of etiology. (*Krankheitswesen und Krankheitsursachen.*)

Park's definition of Diphtheria as given in his summing up in an article in the *New York Medical Record*, September 29, 1894, is, "that all inflammations of mucous membranes which are caused by the Loeffler bacillus should be called Diphtheria, and that by Pseudo Diphtheria is meant all inflammatory conditions which look like true Diphtheria, but which are caused by streptococci and, *rarely*, other cocci." Park admits in his article that during the time of the bacteriological examinations in New York, Diphtheria bacilli were found in 1% of the throats of healthy persons, and later Cailé and Park state that from 8 to 10% of apparently healthy people have Diphtheria germs in their mouths. If this definition is allowed, and if we allow Hansemann's conclusions, given in an address to the Berlin Medical Society, November 28, 1894, of which I will only quote the third: "That the very virulent Diphtheria bacillus of Loeffler is found in several other diseases, such as Rhinitis Fibrinosa, Conjunctivitis Fibrinosa, and Laryngitis Fibrinosa, which clinically and particularly anatomically are different from the Diphtheria of Brettoneau"—*everyone*, will I think, admit that some confusion certainly exists as to what we really mean by Diphtheria. Hansemann was supported in his conclusions by no less an authority than Virchow. Therefore, if Park's definition is taken as a standard, *then* as he says, an acute hyperæmia of the mucous membrane caused by the Loeffler bacillus, is just as much true Diphtheria as an inflammation accompanied by a pseudo membrane or

exudate. This may be true from a bacteriological standpoint, but from a pathological one it certainly is *not always*. According to the conclusions arrived at in his article, we would have to call, for example, any acute Agina or Follicular Tonsilitis, when by the microscopic examination and culture the Loeffler bacillus is found to be accidentally present, *true* Diphtheria. From a clinical and pathological aspect, and I think every physician who has had occasion to see many of these cases will agree with me, they are not very often true Diphtheria. From my own experience I have found, during last summer, that several simple Follicular Tonsilitis cases gave almost pure cultures of Loeffler bacilli, and this is true of many of the ordinary sore throats occurring during the summer months.

I have taken as a basis for my article, the definition of Diphtheria given by Ernst Ziegler in the last edition of his work on general pathology, 1895: "Ordinarily the term Diphtheritis is applied only to tissue necrosis in which the inflamed and infiltrated tissue undergoes necrosis and changes into a lumpy or granular mass without nuclei, or a rather homogeneous mass containing fibrin, in which the structure of the tissue can no longer be recognized. The necrosis may affect at first the epithelium only, which loses its nuclei and later acquires a flaky appearance. If white, opaque patches form on the mucous membrane, as in the pharynx, then it may be called Epithelial or Superficial Diphtheria." Virchow also states that "necrosis is the most important factor in true Diphtheria," and this, too, is the consensus of opinion of most pathologists.

Wagner (General Path.) doesn't differentiate anatomically between Croup (membranous) and Diphtheria; he says: "From a practical standpoint, by Diphtheria and Croup is meant a fibrinous exudate on the free surface of the mucous membrane."

Croup and Diphtheria of the throat then, are characterized by the appearance of a more or less thick or prominent whitish gray, or at times dirty, dark gray or brownish membrane, which at times covers only portions of the throat, at other times may form a continuous membrane, covering the fauces, palate, tonsils, base of tongue, laryngeal entrance, and may even extend to the trachea and bronchi. Microscopic examination of the membrane shows that certain parts are made up of a fine thready, fibrinous net-work with exudate cells or leucocytes, in the meshes. In most membranes the epithelium is not visible or the epithelial cells are greatly changed in appearance and shape; the nuclei disappear, the cells are shrunken and deformed and adhere closely together. The stroma of the membrane is often necrotic. The membrane usually lies directly over the mucous tissue.

At times, especially on the edges of the membrane, a little normal epithelium is to be seen, caused by the fact that at this point the exudate did not come out of the under-lying mucous tissue. In most cases, however, normal epithelium is absent in the portions of the throat where the pseudo membrane has formed.

Since the beginning of the newer bacteriological researches, the search for the pathogenic organisms in the membrane itself has been made. The difficulty has always been that in the pseudo membrane a large number of different organisms are present. Streptococci occur in large colonies, particularly in the sore throat of Scarlet Fever, here too, they are found deeper in the mucous membrane and in the lymph channels. Klebs first discovered the bacillus in the membrane, but it was described more closely by Loeffler. According to Loeffler, the bacillus is not found in the tissues but in the membrane where its epithelial make up can be determined. Kolisko and Paltauf, however, have found the bacillus in the mucous membrane itself under the epithelial layer.

From the pathological appearances simply no sharp dividing line can be drawn between Croupous and true Diphtheritic inflammation. The degree of intensity and inflammation varies. Pathologists make this distinction between Diphtheria and Croup, that in Croup there may be an intact mucous membrane, but destruction of the epithelium; in Diphtheria, with the necrosis of the epithelium, there is also necrosis of the mucous membrane. In *both* the inflammatory exudate on the surface of the mucous membrane. Wagner and Weigert state that a necrosis, or at least a destruction of the function of the epithelium covering of the mucous membrane, was an unfailing requirement for the development of the inflammatory fibrinous exudate. The conclusion that may be drawn from this is that the Croupous membrane never rests upon an intact mucous membrane, but replaces the epithelium which has been largely destroyed. According to Strümpell, the material for the formation of the fibrinous pseudo membrane comes from the fibrinogen of the inflammatory matter which transudes through the walls of these vessels, and *also* from the disintegrated migratory white blood corpuscles. The common impression that when a membrane is easily dislodged and leaves no bleeding surface, the condition is not true Diphtheria, is erroneous, as the easily dislodged fibrinous exudate membranes of Croup are *only* so in mucous membranes lined with ciliated epithelium and containing a large number of mucous glands, as in the mucous membrane of the larynx, trachea and bronchi.

In the mucous membranes covered with pavement epithelium and elastic tissue, (and which have no basement membrane) as in the buccal cavity and walls of the lymph follicles of the tonsils, which contain much elastic tissue, the fibrinous elements of the pseudo membrane are *directly* in contact with the tissue of the mucous membrane and so are tightly adherent. Prof. Monti of Vienna however distinguishes between Diphtheria and Croup, and considers there is no doubt that when a Diphtheritic membrane is pulled off, a loss of substance and diphtheritic ulcer results. When a Croupous membrane is dislodged, simply the epithelium is pulled off, but otherwise the mucous membrane remains intact. Artificial membranes, which have almost the exact appearance of true Diphtheritic membranes, were produced by Brettonneau in 1826, by the introduction of tincture of cantharides and olive oil into the trachea. A dense elastic membrane resulted. Trendelenburg succeeded in producing membranes in the trachea by the use of a solution of corrosive sublimate (1-120), and hardened the mass with bichromate of potash, which could not be done with the most tenacious mucous. Ortel claimed that there was no actual difference between Croup as it actually occurs, and that excited in the wind-pipe of a rabbit by means of ammonia: "color, texture, physical, chemical and anatomical characters were identical." Another class of cases which may occasionally simulate Diphtheria are the acute catarrhal conditions or pseudo Croups, which are mainly limited to the larynx. In the beginning, the mucous membrane is dry as in acute coryza of the nose, with considerable hyperæmia and swelling. When the catarrhal secretion begins, it is viscid and watery, later more turbid, gray or yellowish gray in color, then mucopurulent and later more mucous again. At times the secretion dries and becomes very tenacious, of yellowish character and containing a good many leucocytes and epithelial cells; *then* it may be taken for a pseudo membrane. When the epithelium is cast off very much, superficial erosions or ulcers are sometimes formed. This condition is frequently present in scarlet fever, measles, variola and influenza. There may be a pseudo membrane in these cases which often extends upwards to the epiglottis, tonsils, palate and pharynx, or down to the trachea and bronchi; or it may begin in the fauces and extend down. The membrane may be usually pulled off easily, and the mucous surface will be seen to be greatly reddened with swelling of the mucous and sub-mucous tissue. On microscopic examination the membrane is seen to be made up of a fibrinous mass containing cellular elements, partly leucocytes, which are most abundant in the upper portions of the membrane. Genuine Croup, however, (that is acute laryngitis with

stenosis) *without* Diphtheria is rare, and the so-called Croup in a great majority of cases is Diphtheritic Croup.

By the sore throats of Scarlet Fever and Measles are meant pseudo membranous, or often only acute inflammatory and hyperæmic conditions of the mucous membrane, which occur during these infectious diseases. The angina of Scarlet Fever may be a simple catarrhal condition or an extensive necrosis of the tissues. At times the mucous membrane and tonsils may be greatly swollen. There may be fibrinous exudates on the tonsils and fauces, which at times extend to the posterior nares, larynx and trachea, and often through the eustachian tubes to the middle ear, causing purulent otitis media or even purulent meningitis.

It may be interesting here to consider briefly the pathological unity or duality of Diphtheria and the sore throat of Scarlet Fever. Munn is of the opinion that the membranous throat inflammations that so frequently occur in Scarlatina are true Diphtherias. Other authors claim that the membranous inflammation of the throat which occurs during the *acute* stage of Scarlatina is usually *not* true Diphtheria, but during *convalescence* it is.

Hatfield makes the distinction that the exudate of Scarlet Fever is more yellowish in character and in Diphtheria it has an ashy gray appearance. The removal of the exudate from the pharyngeal mucous membrane frequently leaves the surface bleeding and denuded exactly as in true Diphtheria. Orth states that the combination of Diphtheria and Scarlet Fever is very frequent; the Scarlatina poison always causes an inflammation of the throat and so prepares a favorable soil for the lodgment of the Diphtheria bacillus. It must, however, be remembered in this connection, that in an acute inflammation as it occurs in Scarlet Fever, Simple Acute Angina, or Follicular Tonsilitis, a thin pseudo membrane *often* forms, and even the Loeffler bacillus may be present.

The gross pathological appearances of Diphtheria and Scarlet Fever are different. In Scarlet Fever the pseudo membrane has less the appearance of an exudative, fibrinous membrane, but there is frequently pus and abscess formation in the peri-tonsillar tissue, and under the microscope, the streptococcus will usually be seen. In Scarlet Fever, the cocci go deeply into the mucous tissues, the sub-maxillary lymph glands, and kidneys, which is not the case in Diphtheria. (Orth.)

The microscopic appearance of the sore throat of Measles, Scarlet Fever, Follicular Tonsilitis, and other like inflammatory affections is almost identical. It simply shows a hyperæmia of the mucous mem-

brane, an increase of the desquamation of superficial epithelial cells, frequently great dilatation of the capillary vessels, and cellular infiltration of the connective tissue of the mucous glands. When the adherent fibrinous pseudo membrane is present, then it is microscopically very difficult to distinguish between the Diphtheritic membrane and the membrane of Scarlet Fever.

In Measles the mucous membrane of the fauces is reddened and congested, and on the mucous surface of the mouth there are occasionally superficial follicular ulcers or apthous changes. In very poorly nourished children, Stomacacæ and even Gangrene may result. The inflammation may increase so as to simulate a pseudo membrane. Schmidt saw extensive necrosis of the inferior maxilla with Measles. Ulcers may be present in the larynx, particularly on the posterior wall. (Gerhardt, Gottstein, Eichorst.)

In Follicular Tonsilitis the mucous membrane of the posterior wall of the pharynx, the tonsils, and particularly of the pillars of the fauces, is greatly reddened and swollen. The uvula is usually much swollen and may be œdematous. The tonsils are very much inflamed and usually enlarged. The orifices of the tonsilar crypts are occluded, and the lacunæ, which are slightly elevated from the surface, are covered with epithelium and distended with a yellowish secretion. When the inflammation extends, these lacunæ burst, discharge their contents, and leave small, round ulcers with irregular edges and a dirty purulent base. This process occurs mainly in the tonsils although occasionally the follicles of the posterior wall of the pharynx are also involved. The lymphatic glands at the angle of the jaw are usually swollen. The swollen, yellowish masses of the distended lacunæ are sometimes so close together that, particularly when they burst, the appearance of a Diphtheritic membrane is given.

Finally another affection of the throat which may occasionally look like Diphtheria, is Stomatitis Aphthosa; but only when the apthæ are so numerous and close together as to look like a Diphtheritic membrane. On examining the mouth a white spot may be seen on the tonsil; the next day the characteristic eruption, which consists of white or yellowish white sub-epithelial spots, single or in groups, surrounded by an areola, not unilateral, and which may extend into the pharynx or larynx, appears. After from twelve to thirty-six hours, the epithelial covering comes off and the apthous ulcer results; this usually clears up in a few days. The exudate is made up of fibres, cells and various low forms of life. No cicatrix is left where the spots have been, showing that the sub-mucous tissue was not affected.

Another rare form is the Stomatitis Diphtheritica; in *this* when it develops as a primary disease, which is rare, the membrane usually appears first on the lips, at the same time with one on the tonsils; it may be found upon the cheeks and tongue. The lymphatic glands are not much involved. The finding of the Klebs-Löffler bacillus would be of great aid in making the diagnosis. The membrane lasts from 3 to 6 days and then usually drops off or ulcerates away. The disease is supposed to be of bacterial or chemical origin.

From this necessarily brief and therefore not very complete review of the Pathology of Diphtheria and some of its kindred throat affections, the following conclusions, I think, may be arrived at:

I. That from a pathological and often clinical standpoint, it is not always possible to tell whether the membranous throat inflammations, are *true* Diphtheritic affections or not. Particularly is this the case in differentiating between the so-called Membranous Croup and Diphtheria. While the term Croup should signify that the process is mostly confined to the larynx, and in *many* cases is simply a non-contagious membranous laryngitis due to streptococci, *both* processes give almost identical pathological appearances, and so frequently cannot be distinguished from each other.

II. That the definition of Park, "that all inflammations of mucous membranes caused by the Löffler bacillus should be called Diphtheria, that an acute hyperæmia caused by the bacillus is just as much Diphtheria as an inflammation accompanied by membranous formation or exudate", will not hold good in many cases. Certainly in the simple acute hyperæmias or even acute inflammations, as they occur in Acute Agina and acute, often non-contagious, Follicular Tonsilitis—even though the Löffler bacillus be present—if the element of necrosis, which according to leading pathologists (Ziegler, Prudden, Orth, Virchow and Kolisko), is absent, the process is *not* true Diphtheria.

III. That for most cases the bacteriological examination alone is entirely sufficient to determine whether a case is true Diphtheria or not; but for a certain class of doubtful cases it certainly is not, and the only way a positive diagnosis could be arrived at, *is* that after the microscopical examination and the culture determine the presence of the Löffler bacillus, *then* inoculation of animals. A careful microscopic examination of the membrane itself, showing the changed necrotic epithelial cells, and the other characteristic features of a Diphtheritic membrane, would lead to a more positive conclusion as to what the nature of the disease really is, although this of course in most cases, would be not at all practicable as the patient might die meanwhile.

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Sections of the New Insanity Law of Interest to Physicians.

SECTION 60. ORDER FOR COMMITMENT OF AN INSANE PERSON.—
 A person alleged to be insane and who is not in confinement on a criminal charge, may be committed to and confined in an institution for the custody and treatment of the insane, upon an order made by a judge of a court of record of the city or county, or a justice of the supreme court of the judicial district, in which the alleged insane person resides or may be, adjudging such person to be insane, upon a certificate of lunacy made by two qualified medical examiners in lunacy, accompanied by a verified petition therefor, or upon such certificate and petition, and after a hearing to determine such question, as provided in this article. The commission shall prescribe and furnish blanks for such certificates and petitions, which shall be made only upon such blanks. An insane person shall be committed only to

a state hospital, a duly licensed institution for the insane, or the Matteawan State hospital, or to the care and custody of a relative or committee, as hereinafter provided. No idiot shall be committed to or confined in a state hospital. But any epileptic or feeble-minded person becoming insane may be committed as an insane person to a state hospital for custody and treatment therein.

§ 61. MEDICAL EXAMINERS IN LUNACY; CERTIFICATES OF LUNACY.—The certificate of lunacy must show that such person is insane and must be made by two reputable physicians, graduates of an incorporated medical college, who have been in the actual practice of their profession at least three years, and have filed with the commission a certified copy of the certificate of a judge of a court of record, showing such qualifications in accordance with forms prescribed by the commission.

Such physicians shall jointly make a final examination of the person alleged to be insane within ten days next before the granting of the order. The date of the certificate of lunacy shall be in the form prescribed by the commission, and shall contain the facts and circumstances upon which the judgment of the physicians is based and show that the condition of the person examined is such as to require care and treatment in an institution for the care, custody and treatment of the insane.

Neither of such physicians shall be a relative of the person applying for the order or of the person alleged to be insane, or a manager, superintendent, proprietor, officer, stockholder, or have any pecuniary interests, directly or indirectly, or be an attending physician in the institution to which it is proposed to commit such person.

§ 62. PROCEEDINGS TO DETERMINE THE QUESTION OF INSANITY.—Any person with whom an alleged insane person may reside or at whose house he may be, or the father or mother, husband or wife, brother or sister, or the child of any such person, and any overseer of the poor of the town, and superintendent of the poor of the county in which any such person may be, may apply for such order, by presenting a verified petition containing a statement of the facts upon which the allegation of insanity is based, and because of which the order for the application is made. Such petition shall be accompanied by the certificate of lunacy of the medical examiners, as prescribed in the preceding section. Notice of such application shall be served personally, at least one day before making such application, upon the person alleged to be insane, and if made by an overseer or superintendent of the poor, also upon the husband or wife, father or mother or next of kin of such alleged insane person, if there be any such known to be residing within the

county, and if not, upon the person with whom such alleged insane person may reside, or at whose house he may be. The judge to whom the application is to be made may dispense with such personal service, or may direct substituted service to be made upon some person to be designated by him. He shall state in a certificate to be attached to the petition his reason for dispensing with personal service of such notice, and if substituted service is directed, the name of the person to be served therewith.

The judge to whom such application is made may, if no demand is made for a hearing in behalf of the alleged insane person, proceed forthwith to determine the question of insanity, and if satisfied that the alleged insane person is insane, may immediately issue an order for the commitment of such person to an institution for the custody and treatment of the insane. If, however, it appears that such insane person is harmless and his relatives or a committee of his person are willing and able to properly care for him, at some place other than such institution, upon their written consent, the judge may order that he be placed in the care and custody of such relatives or such committee. Such judge may, in his discretion, require other proofs in addition to the petition and certificate of the medical examiners.

Upon the demand of any relative or near friend in behalf of such alleged insane person, the judge shall, or he may upon his motion, issue an order directing the hearing of such application before him at a time not more than five days from the date of such order, which shall be served upon the parties interested in the application and upon such other persons as the judge, in his discretion, may name. Upon such day, or upon such other day to which the proceeding shall be regularly adjourned, he shall hear the testimony introduced by the parties and examine the alleged insane person if deemed advisable, in or out of court, and render a decision in writing as to such person's insanity. If it be determined that such person is insane, the judge shall forthwith issue his order committing him to an institution for the custody and treatment of the insane, or make such other order as is provided in this section. If such judge can not hear the application he may, in his order directing the hearing, name some referee, who shall hear the testimony and report the same forthwith, with his opinion thereon, to such judge, who shall, if satisfied with such report, render his decision accordingly. If the commitment be made to a state hospital, the order shall be accompanied by a written statement of the judge as to the financial condition of the insane person and of the persons legally liable for his maintenance as far as can be ascertained. The superintendent of such state hospital shall be immediately notified of such com-

mitment, and he shall, at once, make provisions for the transfer of such insane person to such hospital.

The petition of the applicant, the certificate in lunacy of the medical examiners, the order directing a further hearing as provided in this section, if one be issued, and the decision of the judge or referee, and the order of commitment shall be presented at the time of the commitment to the superintendent or person in charge of the institution to which the insane person is committed, and verbatim copies shall be forwarded by such superintendent or person in charge and filed in the office of the clerk of the county where such order is made, and transmit a certified copy of such papers, to the commission in lunacy, and procure and retain another such certified copy.

The superintendent or person in charge of any institution for the care and treatment of the insane may refuse to receive any person upon any such order, if the papers required to be presented shall not comply with the provisions of this section, or if in his judgment, such person is not insane within the meaning of this statute, or if received, such person may be discharged by the commission. No person shall be admitted to any such institution under such order after the expiration of five days from and inclusive of the date thereof.

Vacancies in the Medical Corps of the U. S. Army.

There are at present three vacancies in the Medical Corps of the U. S. Army, and it is expected that at least three more will occur during the present year. As usual, an Army Medical Board will meet in Washington early in October for the examination of candidates. The requirements for admission to the Medical Corps are stated in a circular issued by the Surgeon General of the Army, dated May 21, 1896, and approved by the Secretary of War, as follows:

“Permission to appear before the Board is obtained by letter to the Secretary of War, which must be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates, based on personal acquaintance, from at least two reputable persons as to his citizenship, character and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-nine years old, of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the Board. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his

general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

“The physical examination comes first in order, and must be thorough. Candidates who fall below sixty-four inches in height will be rejected. Each candidate will have to certify ‘that he labors under no mental or physical infirmity or disability which can interfere with the efficient discharge of any duty which may be required.’ Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

“The mental examinations are conducted by both written and oral questions, upon—

“I. Elementary branches of a common school education, including arithmetic, the history and geography of the United States, physics, ancient and modern history, and general literature. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency.

“II. Professional branches, including anatomy, physiology, chemistry, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children.

“Examinations will also be conducted at the bedside in clinical medicine and surgery, and operations and demonstrations will be made by the candidates upon the cadaver.

“Hospital training and practical experience in the practice of medicine and surgery, and obstetrics are essential to candidates seeking admission to the Medical Corps of the Army, who will be expected to present evidence that they have had at least one year’s hospital experience or the equivalent of this in practice.

“To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the ‘elementary branches of a common school education’, by a medical officer of the Army stationed most conveniently for this purpose, who will act under instructions from the Medical Examining Board.”

State Care of Insane.

The seventh annual report of the State Commission in Lunacy has just been printed. The report shows a total net increase in the past

year in all the institutions of the State of 1,131 patients. The increase is divided as follows: In the State hospitals, 585; in the counties of New York and Kings, 515; in the private asylums, 31.

The total number of committed and registered insane on the 1st of October, 1895, in all the institutions was 20,216, of which 10,156 were in the State hospitals, 9,213 in the institutions of New York and Kings counties, and 847 in the private asylums.

The commission refers to the culmination of the efforts pending during the past sixty years to bring about a comprehensive scheme of State for the dependent insane, and cites the fact that the addition of the Manhattan State hospital, formerly the New York City asylum, a few months ago, brought about this result. With the exception of the 847 patients in the private asylums, the insane of the State are now in the care of the State. New York is the only State in the Union maintaining its dependent insane solely in State hospitals.

The extension of the system of training schools in the various State hospitals has further tended to improve the personnel of the hospital nurses and attendants of these institutions.

The commission again recommends to the legislature that managers of State hospitals should, upon being elected to the legislature, be compelled to resign the office of manager.

A system of condemnation of lands for the use of the State hospitals is strenuously urged by the commission.

One of the greatest problems which the commission has to face during the present and coming years is the provision of accommodations for the insane in New York and Kings counties, not only to relieve the frightful overcrowding in these institutions, but to comply with the provisions of the statutes transferring these institutions to the care of the State.

Reference is made to the extensive fire at the Willard State hospital, involving a loss of \$100,000. A blanket policy of insurance to cover State institutions for the insane has been recommended by the commission. It will be remembered that the policy of the State is not to insure the State buildings.

The suggestion is made by the commission that the Rochester State hospital might properly be extended by the purchase of the county buildings in close proximity to the State hospital.

Considerable reference is made by the commission to the improved dietaries in the State hospitals. During the past year the grades of meat, of flour and of butter have, after conference with the medical superintendents, been brought to the highest point.

The uniform schedule of salaries of officers and wages of employes inaugurated by the commission, after prolonged conference with the State superintendents, have been found to work economies in many directions.

The recovery rate has increased somewhat during the past year, a result attributed by the commission to the improved standard of care in the State hospitals.

The commission suggests that the rate of tax for the insane for the coming year be fixed at one and one-tenth mills in order to provide for the excess of patients in the New York and Kings county institutions.

The report is signed by Carlos F. MacDonald, Goodwin Brown and Henry A. Reeves.

Nutritive Value of Meats.

In a recent article on the value of meats as food, in the *Dietetic and Hygienic Gazette*, Prof. R. H. Chittendon corrects several very widespread misconceptions regarding meat values. He says: "The cheapest food is that which supplies the most nutriment for the least money. The well-known maxim that 'the best is the cheapest' is not true of foods, for the term best in this connection is ordinarily applied to that which has the finest appearance, the finest flavor, the most tender structure, etc. Thus, there is no more nutriment in a pound of proteid from tenderloin steak than in the same weight of proteid from the neck or shoulder, and yet note the great difference in cost. The tenderloin will not supply the body's needs one particle better than the coarse-grained meat from some other quarter. A great deal of money is spent by people who can ill afford it, because of this notion that the more expensive cuts are the more nutritious; much of it perhaps attributable to lack of knowledge of the art of cookery. The housewife, not knowing how to prepare the cheaper grades of meat so as to make them palatable and attractive, concludes that they are not as nutritious as the more tender and juicy cuts that can be bought only at a higher price, and which require little judgment or skill to prepare for the table. Here is a field for missionary labor that will well repay the cultivation. Knowledge of this kind may be advantageous to those whose means render it perhaps less vital; for a waste of food material is a crime against both pocket and morals." In speaking of the value of meat as a food in relation to other food stuffs, Prof. Chittenden says: "Various extractive, active principles, etc., all endowed with more or less physiological properties, are likewise ingested as a part of the meat, and add

their effects, perhaps, to aid in keeping up the tone and vitality of the organism. Meats have certain stimulating properties, which distinguish them from the grosser vegetable foods. In this respect they might perhaps almost be classed with such articles as tea, coffee, etc., in their power of ministering to the wants of the brain and nerves. As Sir William Roberts well says: 'The struggle for existence, or rather for a higher and better existence, among civilized men is almost exclusively a brain struggle, and these brain foods must be regarded as a very important part of the equipment for that struggle. If we compare as best we may with our limited information the general characteristics of the high-fed and low-fed classes and races, there is, I think, to be perceived a broad distinction between them. In regard to bodily strength and longevity the difference is inconsiderable, but in regard to mental qualities the distinction is marked. The high-fed classes and races display, on the whole, a richer vitality, more momentum and individuality of character, and a greater brain power than their low-fed brethren; and they constitute the soil or breeding ground out of which eminent men chiefly arise.' It is well understood that differences in mental capacity may be explained, in part at least, by differences in the type of nutrition of the brain cells, and nutrition is unquestionably modified and influenced by the quality of the food consumed. To again quote Sir William Roberts: 'Trainers will tell you that the hunter and the draught horse require to be fed differently. In the hunter is wanted rapid liberation of energy within a comparatively short space of time; in the draught horse is wanted a more gradual liberation of energy and for a longer period. The hunter is fed on concentrated and stimulating food, the heaviest and most expensive oats, which, if I may so express it, is the beef of the vegetable feeders, while the draught horse is fed on a lower and less stimulating diet—on Indian corn and chopped hay, food which tends to increase bulk and weight.' So with mankind, the nature and quality of the nutrient—aside from its containing the due proportion of the several requisite elements—exert a specific influence upon the character of mind and body; and meats may be fairly placed in the front rank of foods as giving important aid toward that higher physical and mental development which belongs to the civilization of the nineteenth century."

Obituary.

DR. ROSS WILSON.

Dr. Ross Wilson died in Chicago August 2d. The deceased was 47 years of age. He was a native of Fort Miller and a graduate of the Albany Medical College. He removed to Sandy Hill about 20 years ago and practiced his profession until he retired on account of ill health two years ago. He was the author of several books and pamphlets. He is survived by his widow, mother, two brothers, George Wilson of Chicago and Henry Wilson of Seattle, and one sister, Mrs. Tracy Gould.

Excessive Meat Eating —Ill-temper may be due to excessive meat eating, and hence is under the control of the person so afflicted by other means than that of the exercise of the will only. Mrs. Earnst Hart in Diet says: "One deplorable result of excessive meat eating in England is the ill-temper which is a chronic moral complaint among us. In no other country, I believe, is home rendered so miserable by the ill-temper of those who are obliged to live together as in England. To everybody examples will occur of homes which are rendered quite unnecessarily unhappy, when they might be happy, by the moroseness and rudeness of the head of the family, by the peevishness of the wife, or by the quarrelling of the younger members. If we compare domestic life and manners in England with those of other countries where meat does not form such an integral article of diet, a notable improvement will be remarked. In less meat-eating France urbanity is the rule of the home; in fish and rice-eating Japan harsh words are unknown, and an exquisite politeness to one another prevails even among the children who play together in the street. In Japan I never heard rude, angry words spoken by any but Englishmen. I am strongly of the opinion that the ill-temper of the English is caused in a great measure by a too abundant meat dietary, combined with a sedentary life. The half oxidized products of albumen form urates and uric acid, which circulating in the blood, produce both mental and moral disturbances.—*The Medical and Surgical Reporter*.

A New Ambulance Carriage has been invented by Dr. Honig, of Berlin. It is not drawn by horses or men in the ordinary way, but is propelled by cyclists, and consists of a kind of litter resting on a frame with five wheels, three in front, in the form of an ordinary tricycle, and two at the back.

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ANNOTATIONS.

Dr. MacDonald Retires—The Head of the State Lunacy Commission Undergoes a Change—Dr. Wise is Selected—Dr. Carlos F. MacDonald, president of the State Commission in Lunacy, has by letter dated August 15, informed Governor Morton of his wish and intention to retire from office on September 30 next, and the governor has, accordingly, appointed Dr. Peter M. Wise as Dr. MacDonald's successor. The appointment to take effect October 1 next. Dr. MacDonald's term would have expired by limitation in May, 1901, but he retires to resume private practice and has taken charge of the establishment, until recently conducted by the late Dr. Choate, at Pleasantville, Westchester county.

Dr. MacDonald in his letter to the governor says:

“MY DEAR SIR—I hereby desire to advise you of my intention to tender to you my resignation of the office of Commissioner of Lunacy, to take effect on September 30, next.

“In taking this step I deem it due to myself to make the following brief statement in explanation thereof: The complete fulfilment of the object—State care for the dependent insane—which induced me to relinquish a less responsible and more lucrative public office to accept, at the invitation of Governor Hill, the presidency of the State Commission in Lunacy, on the creation of that body in 1889, has relieved me from the moral obligation which I then assumed, and which was renewed when, in 1895, you reappointed me for another term of six years. In other words, the accomplishment, within the present year, of this great reform in behalf of the dependent insane, for the con-

sumation of which all true friends of that unfortunate class are deeply indebted to you, has left me free to avail myself of the opportunity which has come to me to retire from the cares and responsibilities of public service, to which twenty-seven years of my professional life have been given in connection with the care of the insane, to the more peaceful and more adequately compensated walks of private professional practice.

"I need scarcely say that this step which terminates the pleasant official relations which I have been permitted to have with yourself, as well as with my associate commissioners, and the officers and employees generally of the department for the insane, is not taken without a feeling of sincere regret on my part.

"In conclusion, I would take occasion to express my deep sense of personal obligation to you, as well as to your predecessors, Governors Hill and Flower, for the confidence, encouragement and support which you and they have at all times extended to me in the discharge of the arduous and oftentime trying duties of my office, and especially for sustaining the commission in its endeavor to maintain the department of the State government over which it presides on a non-partisan basis."

The resignation of Dr. MacDonald and the appointment of Dr. Wise to fill the vacancy thus created constitute a change in one of the most important and extensive departments of the State governments. After an arduous service of seven years as president of the commission, during the trying period of its inception and organization, Dr. MacDonald retires to assume charge of a private institution for the insane, for the direction of which his experience has pre-eminently fitted him. His life has been spent in the special field of psychiatry, and he has attained the highest honors in the gift of the State in his department of medicine.

Dr. Wise, the new president of the commission, has given a quarter century to service of the State and the care of its dependent insane. In 1873 he was appointed assistant physician and in 1884 he was promoted to the medical superintendency of the Willard asylum. In 1889 he accepted the medical superintendency of the new St. Lawrence State hospital at Ogdensburg. The latter institution was conceived in a most enlightened spirit of progress, and was intended to be an exponent of the latest and most approved plans of hospital construction and administration. In the seven years of Dr. Wise's incumbency, the policy of the hospital and the basis of its organization has been completed. It is recognized throughout the scientific medical world as a model of convenience and adaptability for its purpose, and has

already attained a reputation in the special field of treatment and cure of recoverable cases of insanity, a branch of work indicating the high medical plane upon which the administration of the hospital has been founded. Dr. Wise thus brings to his new position a most mature experience, gained in long and active duty in the subordinate places of the great department of which he is now to be the chief. His removal to Albany will be welcomed as a prominent accession to the scientific circles of the city.

The State Lunacy Commission gave out for publication resolutions adopted by the superintendents of the ten State hospitals, acknowledging their appreciation of the important service rendered by Dr. MacDonald, their regret at his withdrawal, and heartiest wishes for his future prosperity and success.—*The Argus*.

Legal Responsibility of a Physician for the Negligence of His Professional Substitute.—It is customary for the physician, when temporarily absent from his practice, to intrust it to another physician; and, in the recent case of Blank vs. Hathorn, which arose in New Jersey, the duties and liabilities of the principal and his professional substitute were ascertained and defined.

The action was brought on the theory that the substitute was the agent of the absent physician, who, as a consequence, is liable for the results of the negligence or unskillfulness of his substitute. The trial court adopted this view; but the Court of Appeals, to which the case was carried by the absent physician against whom a verdict was obtained, declared this to be error, holding that each physician was engaged in a distinct and independent occupation of his own, having no business connection with the other except such as might incidentally arise from the one attending the patient of the other while he was temporarily absent; and that in such case the regular physician is not liable for the want of skill in his professional substitute.

The principal facts which were proven at the trial of the cause are as follows: The defendant, a practicing physician of the city of M., promised the plaintiff, who resided in that city, to attend to his wife professionally during her confinement. A short time before that event took place he left the city for a three days vacation; having first visited the wife of the plaintiff, and made an examination of her condition, from which he concluded, as he informed her, that his services would not be needed for a few days. Before his return, however, she was confined. The plaintiff, when his wife's trial came on, telephoned to the house of the defendant for him to come at once; and in response to this message one Doctor P. arrived stating that Doctor B. was out of town and he represented him, and proceeded to take charge of the

case and to deliver the plaintiff's wife of her child, without any objections being made. It was not suggested that his treatment of the wife was unskillful, but evidence was offered to show that after the birth of the child he improperly severed the umbilical cord so close to its body that it was impossible afterwards to tie it, and the child consequently died, in a short time, of umbilical hemorrhage. The shock caused by the child's death under these circumstances, it was testified, so affected the mother as to seriously injure her health, and render her an invalid for many months, thereby depriving the plaintiff of her services and companionship, and making it necessary for him to incur expenses which he would not otherwise have been called upon to meet; and this suit was brought to recover compensation for such loss of services and companionship, and for such expenses, on the theory that Doctor P. was the agent and representative in this matter of the defendant, and that, therefore, he was legally liable for these results of Doctor P's unskillfulness. The trial judge adopted this theory, advanced on behalf of the plaintiff, in his charge to the jury, and so instructed. "In this," says the Supreme Court, in an opinion Gummera J., "there was an error. Doctor P. and the defendant were each of them practicing physicians of this State, having no business connection with one another, except that Doctor P. was attending the patient of the latter while he was temporarily absent. Even if it be admitted, therefore, that Doctor P. was employed by the defendant to attend upon the wife of the plaintiff, that fact did not render the defendant liable for his negligence or want of skill in the performance of this service, for an examination of the authorities will show that a party employing a person who follows a distinct and independent occupation of his own is not responsible for the negligence or improper acts of the other.

"But," continues the judge, "even if I had reached the conclusion that Doctor P. was the agent of the defendant, in his attendance upon the wife of the plaintiff, I should nevertheless consider that there could be no recovery in this case for the losses sustained by the plaintiff. He does not complain that his wife was unskillfully treated by Doctor P., and that he thereby lost her services and companionship, and incurred expenses on that account to which he would not otherwise have been put. His claim is that such unskillfulness caused the death of his child, and that the shock of its death caused the sickness of the mother, with the consequent deprivation of her services and society, and the increase of his expenses. The gravamen of the action, it will be perceived, is the death of the child, and the injury sustained by the father, for which damages are sought to be recovered, is the result of that death. Since the decision of the Supreme Court in the case of

Grasso vs. Railroad Co., it has been considered as settled law in this State that no action will lie for an injury caused by the death of a human being, with the exception of that provided by the act of March 3, 1848, which permits a recovery by the personal representatives of the decedent, for the benefit of the widow and the next of the kin, of the pecuniary loss resulting to them from such death. The decision in that case was rendered after a careful and exhaustive consideration, and the views expressed by Maggie J., in delivering the opinion of the court, must be accepted as a correct exposition of the law on the subject. The judgment of the Circuit Court should be reversed."

It must be borne in mind, however, that the doctrine of agency applies in the case of a medical student. And, accordingly, the preceptor is liable in damages to a patient for unskillfulness in treatment by his student whom he has sent to attend such patient professionally. —*International Medical Magazine*.

Saved Because His Heart Was Right.—A man in Indiana was shot the other day and would have been instantly killed if his heart had been in the normal position, for the ball from his assailant's revolver passed directly through his body at the place where his heart ought to be. Fortunately the man had transposition of the viscera, his heart being on the right side. The ball touched none of the great vessels and the man will probably recover.—*Medical Record*.

Nutritive Value of Corn Meal.—Professor Atwater, who has for many years been engaged in investigations relating to foods for the United States Department of Agriculture, has been led to the conclusion as the result of exhaustive studies on the subject, that, considered from economical standpoint, corn meal has the highest nutritive value of all foods. Ten pounds of corn meal contain more than eight pounds of actual nutriment, while the same quantity of potatoes possess but three-fourths of a pound of nutriment material.—*Modern Medicine*.

The Result of Injections of Erysipelas Toxines upon Malignant Growths.—At a recent meeting of the New York Surgical Society, a report of which is published in the July number of the *Annals of Surgery*, Dr. L. A. Stimson, Dr. A. G. Gerster, and Dr. B. F. Curtis submitted the following report upon the use of erysipelas toxines in the treatment of malignant disease.

"Both before and since our appointment as a committee, we have been able to observe, individually and together, a considerable number of cases treated by this means, and in no case have found any amelioration which held out a prospect of ultimate cure. We have, on the

contrary, observed in some cases that the rate of growth of the disease was much more rapid during the treatment. The treatment also imposes a very severe tax upon the strength of the patient, and apparently hastens the cachexia in most cases. We believe that in the instances of apparent cure or marked improvement the correctness of the diagnosis is open to doubt. We therefore submit:

“1. That the danger to the patient from this treatment is great.

“2. Moreover, that the alleged successes are so few and doubtful in character that the most that can be fairly alleged for the treatment by toxines is that it may offer a very slight chance of amelioration.

“3. That valuable time has often been lost in operable cases by postponing operation for the sake of giving the method of treatment a trial.

“4. Finally, and most important, that if the method is to be resorted to at all, it should be confined to the absolutely inoperable cases.”—*N. Y. Medical Journal*.

Searching for Quacks in New York.—The police were engaged in taking a census of the practicing physicians in the city. The work was done at the request of the New York County Medical Society. The object of having the census taken is in order to provide evidence for the New York County Medical Society to proceed against the physicians practicing illegally.

The Growth of Proprietary Remedies in the West.—An analysis of 10,000 prescriptions made by the committee on revision of the United States Pharmacopœia of the Illinois Pharmaceutical Association shows that in 2,613 prescriptions, or about one-fourth of the whole number, proprietary remedies were prescribed.—*Medical Record*.

Fuller Privileges for American Students in French Institutions.—Official information has been received in Washington by the Franco-American committee, organized for the purpose of securing fuller privileges for American students in the educational institutions of France, that in all probability the faculties of letters will soon be open to Americans as freely as the other faculties that have already been opened. The Compagnie Trans-Atlantique offers a reduction of thirty per cent in its rates to duly certified American students who intend to study in France.

There are already fifty or more American students enrolled in the French faculties. Since the promulgation of the decree of January last, changing the regulations in the faculties of science, the number of German students in the French faculties has increased from fifty-two to one hundred and twelve, of whom only sixteen are students of medicine.

The admission of foreign students to the medical schools gave rise to a serious debate in a recent session of the chamber of deputies, it being claimed that French students were exposed to undue competition on account of the influx of foreigners, who, by reason of graduation, become entitled to practice medicine in France, and this without being subjected to military duty. It is probable that the regulations will be modified so that foreigners will not be hereafter entitled to the privilege of practice, although the facilities for study and the obtaining of degrees will be as good, or better than before.

Guaiacol as a Topical Application in Diphtheria.—Dr. S. Solis-Cohen states that this drug early used seems to destroy the bacilli and prevent the spread of the pseudo membrane. Bacteriological examination of cultures taken from the same throat before and after its application has shown in the first instance the bacilli, and in the second none have been found. The formula is guaiacol, 10; menthol, 1; sterilized olive oil, 10. The same application is of service as a prophylactic against diphtheria by application to the throat of the healthy inmates of the house in which the disease has appeared. This has been proved by Elwyn in two epidemics. In follicular tonsilitis it is capable of cutting short the disease if early and thoroughly applied and even in parenchymatous tonsilitis mitigates considerably the severity of the affection.—*Philadelphia Polyclinic*.

The Thoracic Organs in Chlorosis.—F. Muller (Berliner Clin. Wochenschrift, 1895, No. 38), calls attention to the fact that in chlorosis the diaphragm is abnormally high, so that the percussion is much like that in children. The fact that in chlorosis the cardiac dulness is enlarged has been variously explained. Muller has noticed that in recovery from chlorosis the diaphragm of the sternum being the first abnormality to disappear. As a hypertrophy of the heart can hardly be supposed to exist in these cases, and as the shape of the heart opposes the idea of dilation, Muller assumes that the enlarged heart-dulness is due to incomplete expansion of the lungs. This would also explain the high position of the diaphragm.—*The American Journal of the Medical Sciences*.

Electrical Alarm for Infants.—According to a French journal an inventor has devised an electrical arrangement which consists of a microphone placed near the head of a baby in its cradle and connected to a sort of relay which operates an electric bell placed near to where the nurse is asleep; a cry from the child will therefore cause the bell to ring.—*Popular Scientific News*.

Cholera Scourge in Egypt.—Cairo, August 16.—The official cholera statistics show that during the past week there were 1,091 deaths from the disease throughout Egypt. The total number of deaths since the scourge began is 14,755.

The Root of Quackery in Kentucky.—Under this head the *American Practitioner* and *News* gives an account of the results of the present law regulating the practice of medicine in Kentucky. It is said that the placards, signs and show bills of quacks, which used to stare one in the face, in every public place, are no longer seen, and that those who practice medicine honestly are not handicapped by the methods of advertising employed by these pretenders. The benefits are not limited to the cities of the State, but affect the rural practitioner as well. —*Medical Record*.

Decision that Venereal Disease is Sufficient Cause for Divorce.—The *Semaine Medical* states that the Paris Court of Appeals recently decided the fact of marrying before being cured of a venereal disease, and knowingly communicating it to the other party in the marriage, is sufficient cause alone to allow a divorce.—*The Journal of the American Medical Association*.

Baths in Public Schools.—While this subject is being agitated in Boston and some other parts of this country, the city of Milan has brought it to a practical trial. The experiment was recently made at that city at one of the comunali schools, in the presence of civic representatives of the municipal medical adviser, Dr. Uffreduzzi, and of Dr. Sacchi, of the clinical staff of the Ospedale Maggiore. Forty boys, accommodated in a disrobing-room, fitted with benches, were made to strip, and covered only by their large drying towels, were led in relays of five to a contiguous hall, where they were all made to take the douche. Thereafter, provided with soap, they cleansed themselves from head to foot with fresh water and returned to the disrobing-room to dry and dress themselves. The mechanism of the douche is simple. Five small reservoirs are suspended in a row at a height of two and a half yards from the floor and furnished, laterally, with two chains. Pulling that on the right the boy is douched *a colonna* (in a volume of water); on pulling that on the left he is douched *a pioggia* (in a shower). The locale has been modeled on the lines of a similar locale in barracks, and may be heated in winter.—*Medical News*.

The Anti-Science Crusade.—Under the specious plea of preventing cruelty to animals, a crusade is constantly being waged against science and common sense. The crusade against physiological inquiry is one

against the acquisition of knowledge by which life can be saved, and recent anti-scientific agitators go so far as to urge that patients in hospitals should be "protected against treatment by which their disease can be cured." "Knowledge" is often said to be "power," and the particular form of knowledge against the attaining of which these onslaughts continue to be made has indeed shown itself to be a power in the saving of life. When one serious disease comes on the top of another, then it is apt to go hard with the patient, and for years back it has been found that of all the complications of convalescence from scarlet fever, the occurrence of diphtheria has been the most terrible. Far more than half the patients so attacked died until the introduction of antitoxin. Then the whole aspect of affairs was changed, for the death rate fell, so soon as antitoxin was used in treating the disease, from an average of 63 per cent. during the preceding three years, to one which at the outside, even after deducting the mild cases, was not more than 7.5 per cent. This is sufficiently striking, but since the publication of the official report even better results have been obtained, long series of cases having occurred without any death at all. Now, at what expense of cruelty have these results been obtained? A few healthy old horses which, if not used for this purpose, would either have already gone to the knackers' yard, or would be still enduring the hard fate which old horses must suffer when they have to earn their living in the streets, are now well housed, well fed and well groomed, on the one condition that they now and then put up with such a bleeding as, not so long ago, was voluntarily undergone by healthy men as part of the routine of spring and autumn. Yet, because this thing goes by the name of vivisection, these writers howl, and leave the ignorant to demand that these horses should be restored to the miseries of the streets, and that these children should again be handed over to the most cruel of all deaths.—*British Medical Journal*.

The Spanish Soldiers in Cuba.—During the last third of June there were about 8,000 men lying ill in the Spanish military hospital in Cuba, of which number 1,300 were suffering from yellow fever. The mortality rate of this disease is increasing. The epidemic of small-pox shows no signs of diminishing.—*Medical Record*.

The Treatment of Ascites by Injections of Oxygen Into the Peritoneum.—At a recent meeting of the Lyons *societe nationale de medicale*, a report of which appears in the *Province Medicale* for July 4th, M. Teissier related the case of a woman who came under his care for ascites with generalized oedema. He treated her according to M. Potain's method of abdominal puncture followed by injections of oxygen into the peritoneum. At the first puncture about fourteen pints

were withdrawn, but no amelioration occurred as the liquid collected again in six days. A second puncture was then made and followed by the injection of 1,300 cubic centimetres of oxygen. The operation was very well borne, and it did not provoke any pain or local reaction; there was also complete absence of fever during the following day.

The abdominal circumference diminished from 128 to 102 centimetres, and the oedema of the lower limbs disappeared very rapidly. The oxygen was easily absorbed by the peritoneum. For some days there was some gurgling, but this disappeared at the end of eight or ten days. At the present time the abdomen still measured 102 centimetres and sonorousness existed everywhere, even in the iliac fossa, when the patient lay on her side. She was able to get up every day and walk in the open air. These results have been obtained in three weeks.

The patient entered the hospital suffering from alcoholic cirrhosis, and after her entrance the liver increased in size and cardiac symptoms presented themselves. The diagnosis, said M. Teissier, might be open to discussion, but that was the secondary interest only; he presented the case because he had seen the grave symptoms disappear in three weeks under the influence of an injection of 1,300 cubic centimetres of oxygen into the peritoneum.—*New York Medical Journal*.

The Removal of Cerumen from the External Auditory Canal.—In a practical note upon this subject we are told by Laurent that under no circumstances should cerumen be removed from the ear by the use of metal instruments, such as tweezers, stylets or other similar instruments which may do damage, unless the physician be an experienced otologist and familiar with the technique of removing foreign bodies from the ear; for by the use of these instruments, aside from ordinary damages which may be done by bruising, it is possible to produce furunculosis, of the external auditory canal through infection of the glands, and there is also danger of injuring the tympanic membrane, or of causing hemorrhage from the canal, or deafness and vertigo. By far the safest and most efficient plan for removal of wax under these circumstances is the use, by means of an absolutely sterile syringe, of water which has been sterilized by boiling and which is as hot as the patient can bear. If desired, a very small portion of carbolic acid may be added for its antiseptic influence. After the water is sucked up into the syringe, care should be taken that the point of the instrument is elevated and that all air is driven out of it, as the injection of bubbles of air into the external auditory canal produces a very disagreeable and painful sensation in the ear. A small pitcher or vessel, usually used for receiving liquid when the ear is being irrigated, is

held tightly against the skin beneath the ear, and then the water is injected with gradually increasing the force until the mass is loosened and readily removed. Great care must be exercised that the first drops in particular are not driven into the ear with too much force, for if force is used vertigo and pain will result. In other words, no forcible measures should be used under any circumstances for the removal of such accumulations as we are speaking of. Five or six syringefuls of water are usually sufficient. In other instances irrigation by means of a fountain syringe held eighteen inches or two feet above the ear of the patient is more efficient than the piston syringe. If the mass in the ear is so hardened that the injection of water will not soften it, it is well to prescribe as follows:

R Bicarbonate of sodium, 15 grains;
Glycerin, 1 drachm;
Water, 1 drachm.

Three times a day the patient drops into the ear, by means of a spoon or with a medicine-dropper, five or ten drops of this solution, which has previously been warmed, and after it has remained there for a few minutes a pledget of cotton should be placed in the external auditory canal in order to preserve the moisture. In course of a day or two the cerumen will be so softened by this solution, that it will be easily removed. If it is perfectly free in the auditory canal, it can of course be removed by a scoop or tweezers, but these are never to be employed unless the concretion is already loosened. After the removal of the mass the ear should be thoroughly dried by means of absorbent cotton, and a small pledget of absorbent cotton be placed in the external auditory canal to protect the part from the cold. If these measures are used serious results never occur, and the deafness which has been produced by the obstruction in the canal speedily disappears.—*Journal des Practiens*.

An Income Tax on Physicians.—Louisville, Ky., has imposed a license tax upon physicians, graded according to their income. In case the income is less than \$2,000 the annual license shall be \$10; \$2,000 and over and less than \$5,000, the license will be \$20; where the annual income is as much as \$5,000 but less than \$10,000, the license is \$40; all whose yearly business amounts to \$10,000 or over, shall pay a license of \$100. The Louisville Medical Monthly says that the medical societies of Louisville have appointed committees to confer with each other and take steps to test the legality of the law. A test case will be submitted to the court, and until this is done all physicians are requested to resist payment of the license.—*Medical Record*.

The Spread of Leprosy.—The medical world has a task before it, in limiting the spread of leprosy. With increase in the facilities of international communication comes added danger, and though some years ago, leprosy in America was unknown, to-day it is not uncommon. It is estimated that there are in India, twenty thousand lepers; in China, one hundred thousand; in Japan, twelve hundred; in the Sandwich Islands, more than twenty thousand; in Cuba, more than five hundred; and in Norway and Sweden, two thousand. Leprosy is not confined, as these figures show, to climates hot or cold. It is an incurable disease; ending in death, and it passes from one person to another by inoculation. The disease is very slow in developing, and makes its appearance years after the contact or exposure. The miseries and mutilations that result from this disease are so horrible that one dislikes to write about them. Those who are afflicted with it, are miserable outcasts, and often die like dogs.

The Norwegian government has made arrangements for the calling of specialists in the study of this disease, to meet in Bergen next year, and Bergen is the home of the discoverer of the *lepra bacillus*.

The spirit of Christian philanthropy has had much to do with the alleviation of the condition of lepers.

Only a few days ago a leper was picked up in the streets of Paris, and carried to the St. Louis hospital. In Spain and Portugal there are numerous leper hospitals, and in Turkey and the Ionian Islands, leprosy gains ground rapidly. In Crete there are five hundred lepers. An old leper colony in this country is in New Brunswick, Canada, where from one case sixty years ago, inside of sixteen years, it had spread to twenty cases.

Since 1880, when the hospital Tracadie came under the charge of the Sisters of the Hospital Dieu, of Montreal, over eighty persons have been admitted; seventy-six persons have died in the building; and there are now less than thirty inmates. The disease appeared in the state of Louisiana before it did in Canada, about a century ago, and it has gained ground ever since. There is a leper colony in the parish of Iberville, known as Indian Camp, where there are now twenty-seven lepers; two colored and twenty-five white; eleven women and sixteen men. The camp is supported by the State, but there is no legal authority for the arrest and detention of lepers.

There are lepers in South Carolina, near the coast, and the disease has made its appearance among the Scandanavian population of the northwest. It is a disease whose victims should be controlled with Christian kindness, but whose dangers should be limited by legal enactments.—*Argus*.

A Dumb Thermometer.—A member of the Zurich Medical Society recently exhibited a self-registering clinical thermometer on which there were no degree marks. The instrument could be left with the patient's family to take the temperature in the absence of the physician, and the latter could then read it by means of an attachable scale of glass or metal.—*Medical Record*.

REVIEWS AND BOOK NOTICES.

The Three Ethical Codes. That of the American Medical Association, its Constitution, By-Laws, Amendments, Etc. That of the American Institute of Homœopathy, and that of the National Eclectic Medical Society. Limp cloth, round corners, 55 pages, postpaid 50 cents. The Illustrated Medical Journal Co., Publishers, Detroit, Mich. By comparing the Code of the Homœopathic Society with that of the American Medical Association, it will be found that several sections of the former are similar to the latter's code. The Eclectic Code is worthy of mention for its brevity.

The Multum in Parvo Reference and Dose Book. By C. Henri Leonard, M. A., M. D., Professor of the Medical and Surgical Diseases of Women, Detroit College of Medicine. Flexible leather, 143 pages, price 75 cents. Detroit, 1896. The Illustrated Medical Journal Co., Publishers. This is a recent edition of the Dose Book, of which the title page informs us some forty thousand copies have been issued. The present edition is printed on very thin paper, and is bound in red leather, round corners, so as to make it specially light and handy for the pocket; the weight is not two and a half ounces. Besides the doses of some 3,500 preparations being given, it has numerous tables, such as the solubility of chemicals, pronunciation of medical proper names, poisons and their antidotes, incompatibles, tests for urinary deposits, abbreviations, table of fees, etc. It will be found a handy pocket companion.

READING NOTICES.

Peroxide of Hydrogen.—Dr. Warren Brown, of Tacoma, Washington, in a paper on "Peroxide of Hydrogen," read before the Washington State Medical Society, and published in the *Medical Sentinel*, of Portland, Oregon, February, 1896, after alluding to its method of manufacture, speaks of it therapeutically as follows:

Gonorrhœa may often be aborted by using a full strength hydrogen dioxide injection immediately on the very first appearance of discharge. The injection should be used four to six times in twenty-four hours and retained for five minutes.

Cystitis, where pus is voided with the urine, often yields rapidly to injections of a solution containing two ounces to the pint.

Otitis media is treated by hydrogen dioxide solutions in various strengths from 6 per cent. upward.

Eye diseases, where there is a purulent external inflammation, are constantly being benefitted by this agent. The Wills Eye Hospital, Philadelphia, uses a 50 per cent. strength of the so-called 15 volume solution. Blepharitis marginalis is quickly cured by touching the edges of the lids once or twice daily with a strong solution, care being taken to avoid getting it into the eyes.

Ulcers of all kinds improve rapidly under its use, and for treating and cleansing venereal sores, as chancroids, etc., it is of great service.

Empyema, especially where there is from the first a stinking sanious exudation following incision, is very satisfactorily treated by washing out the cavity with a solution from one half to full strength.

In appendicitis, the abscess cavity is cleansed with this solution by many operators, in preference to any other antiseptic. Robert T. Morris, of New York, has laid special stress on the value of the peroxide in these cases.

In follicular tonsillitis, the use of a spray, diluted just enough to prevent the smarting sensation, and alternating with this, one of the alkaline antiseptic sprays, or gargles, is a very satisfactory procedure.

Diphtheria and all naso-pharyngeal inflammations where there is a pseudo-membranous and septic condition, have been treated very widely by means of this agent. I like the plans of Jennings in Detroit, who uses an irrigation of an aqueous solution of one-eighth each of hydrogen dioxide and listerine. He throws the solution into the pharynx with an all-soft rubber syringe every one, two or three hours. The plan is an admirable one for treating children, and the combination is pleasant and effective.

Atrophic rhinitis is benefitted remarkably by the use of a 40 per cent. spray. It should be used a few minutes before the employment of the usual alkaline, stimulating spray, and the powder insufflations. In this way the scabs are loosened, muco-purulent secretions are dissolved, and a stinking breath is converted into one that is pure and sweet.

In acute cases of eczema of the leg, we find this agent of the utmost value. The tissues are inflamed, hot, swollen and oozing, the itching is almost unendurable, the odor is offensive. To secure the best results the limb is elevated, and a diluted solution of the peroxide is applied frequently, with cheese cloth, gauze or an atomizer. In two or three days a marked change for the better will be apparent, the pruritus is allayed, the purulent exudation is checked, and all inflammatory symptoms are subsiding. At this stage we begin the use of a

soothing ointment, such as the boracic acid or zinc oxide, using lime liniment to wash the parts, instead of water. Under this treatment, combined with rest, we will see our patient rapidly cured.

Eczema of the anus will rapidly improve if the fissures are touched twice a day with this solution, then dried gently with cotton, and a glycerite of lead application made. In nearly every form of acute eczema in the first and second stages, the peroxide will give us the keenest satisfaction. The regular solution is diluted with two or more parts of water. Hydrogen peroxide is an excellent anti-pruritic, and for this purpose it is widely used.

The hæmostatic value of this drug, as pointed out by Dr. Emerson Brewer, of New York, I can endorse. In operations on the nose and throat I have upon two occasions been enabled to check a persistent hemorrhage, when Monsel's solution and plugging had failed. At present I am in the habit of applying full strength hydrogen peroxide after every operation on these parts. It is of special value after sawing out a deviated septum.

For flushing out a mammary abscess cavity this agent is invaluable.

Applied to the cervix uteri, adherent mucus is removed and our medications can be applied.

When it is inadvisable or impossible to make a complete opening of a fissure or abscess, irrigation with the peroxide will be found superior to all other antiseptics.

We have in peroxide of hydrogen a prompt, safe and efficient germicide. By its oxidizing power it rapidly decomposes pus, diphtheritic membranes, and other morbid putrifying material. It is a thorough deodorizer, and as a cleansing agent for foul wounds, abscesses, etc., it has no equal.

Of the different preparations of peroxide, Marchand's has been most uniformly satisfactory.

Since writing the foregoing paper my attention has been called to hydrozone, a stronger solution of peroxide of hydrogen, which for some months I have been using with much satisfaction.

There is no opiate that serves the purpose that does Papine. Bromidia speaks for itself. Iodia is an alterative, unsurpassed in its merits. I prescribe these remedies, and specify Battle & Co., because they are so well prepared that I think no drug store or prescriptionist capable of combining their ingredients so nicely, so accurately, and all considered so reliably as they are coming from their laboratory.

West Nashville, Tenn.,

J. H. GILES, M. D.

December 23, 1895.

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A Sketch of the Gradual Perfecting of the Methods of Medical Education in the Albany Medical College and in New York State during the Nineteenth Century.

THE INTRODUCTORY LECTURE DELIVERED AT THE OPENING OF THE SIXTY-
SIXTH SESSION OF THE ALBANY MEDICAL COLLEGE, ON SEPT. 29, 1896,
BY HENRY HUN, M. D.,

Professor of Diseases of the Nervous System in the Albany Medical College.

GENTLEMEN :

As you assemble at the beginning of another school year in the old amphitheatre, which for nearly sixty years has been the scene of similar introductory lectures, in the name of the Faculty I gladly bid you welcome. We hope, indeed, that you are well come, your minds and bodies healthy and rested by vacation, and your hearts filled with enthusiastic love for the arduous profession which you are preparing to enter. For the medical profession certainly is an arduous one, and although you can all probably derive a fair living from it, and although it has many moments full of the greatest joy and satisfaction, yet you will make a great mistake if you enter it with the idea of acquiring wealth and leading an easy life. Your professional day's work will consist of many hours, your hard' earned meals and your nights will be frequently disturbed by calls to duty; some of your work will be very disagreeable, even degrading, if it is done only for the money that you will receive for it, your feelings of pity and sympathy will be almost constantly stirred, and you will often be blamed when you least deserve it. On the other hand, you will be more often praised and blessed when you deserve it but little, and you have daily the opportunity of helping poor suffering humanity, and of mingling with your professional work deeds of kindness and love.

It is not desirable in this matter-of-fact world, in which money is the key to much happiness, to be always soaring in the clouds among high ideals; but if you do not feel, ever present, the ambition to acquire a thorough knowledge of the science and art of medicine, if your enthusiasm at the contemplation of that noble science and art is not, at times, such that it carries you above the sordid business idea of your profession as merely a means of acquiring money, if you never have visions of a little circle in the great world made better and happier by your professional work, if you are not willing to make sacrifices to obtain the realization of these visions, you would do well to stop now, turn away from the school, and save both your time and money. You may indeed enter the medical profession merely for the money there is in it, and if you have ability, you may acquire a large income from your practice, but even the people, whom your ability forces to come to you for advice, will instinctively feel that you are not a true member of your honored profession, and you will yourself know that there is a satisfaction and joy to be obtained from your professional work which is beyond your reach, that you will leave no imprint behind you on medical science, and that your name will never be on that long list which the medical profession loves to honor. Therefore, I would urge you to commence the study of medicine with a deep sense of its dignity and worth and with the firm belief that only by being true to the highest impulses of your nature can you attain the highest success in your profession.

The study of medicine, which you are undertaking, is long and difficult. It will occupy your entire life. Even to master so little of it as the community regards absolutely essential to your commencing to practice will tax severely both your intelligence and your perseverance. How much you will have to learn, how much medicine has become specialized, you may judge from the fact that before you will have completed your work in this school, more than forty men will have taught each one of you some portion of that vast amount of medical knowledge, which has been accumulating slowly during ages and with great rapidity during the past fifty years.

Forty men, all selected for their special fitness for the work, all eager to teach that which they know best; that is a great contrast to the only method of learning medicine possible in this State a hundred years ago. Then, the student of medicine underwent a form of apprenticeship to a doctor with a few instruments and fewer books, living away from any medical centre and out of touch with any medical investigation. We may all congratulate ourselves, I think, on the way medicine is being taught here and now. Not that we should,

therefore, stand still and take our ease. Ten years hence the methods of teaching in the Albany Medical College will, I trust, be much better than they are now, but even at the present time they answer their purpose with a reasonable degree of completeness.

It is a wonderful change that has taken place in medical teaching in this State during this nineteenth century, and in a school where there is no chair of the History of Medicine, it seems to me that it may be of interest to you to trace the stages of the gradual development of this school and of medical education in this State during the century and to see how the methods of instruction have slowly broadened out in response to the advance in medical knowledge and to the demand for a better education. The present can only be understood by an acquaintance with the past.

At the beginning of this century there were in the United States two medical schools. One of these was the University of Pennsylvania, which had been in existence some thirty years, was well organized and already gave medical instruction of that high degree of excellence which has ever characterized it throughout its long and honorable career of usefulness. The only other school in the United States, and the only one in this State, was the faculty of medicine in Columbia College, which, founded in 1792, enjoyed but a short life; being united in 1814 with its younger rival the College of Physicians and Surgeons, which was organized in 1807. Unfortunately the early life of this latter school was one of stormy dissension. There was waged an almost continuous conflict between different parties in the faculty and the Board of Regents, in whose name the school was founded. So bitter was this warfare that the medical instruction of necessity suffered. The school had not yet entered upon that brilliant career which was to place it in the first rank among the medical schools of the country.* At the beginning of this century, then, all students who studied medicine in this State, with the exception of those in the Columbia College Medical School, must do so by apprenticing themselves to one or more doctors practising anywhere in the State.

In considering the apprenticeship system, which the vast majority of those desiring to study medicine in this State at the beginning of this century were compelled to adopt, it must be remembered that at that time there was really very little medical knowledge to be learned. Although theories were rampant in those days and most elaborate hypotheses were constructed upon a very narrow and shallow foundation of fact, yet all that was really known of any practical importance

* For an interesting account of the early struggles of this school see the President's address for 1826 and for 1827 in the Transactions of the New York State Medical Society.

about surgery or medicine would not more than suffice to fill a small text book; while, of course, the specialties as distinct branches were unknown. Relatively much more was known about gross anatomy. In that branch, even then, there was a comparatively broad field for study. *Materia medica* was extensive even if not very effective, and a little bit of chemistry and of physiology were open to the ambitious student. Still, after all, there was not very much to be learned, and by diligently reading his books and getting light on obscure points by familiar discussions with his experienced and shrewd preceptor, by assisting the latter in his surgical operations and by hearing him discuss his medical cases during long drives behind a sleepy horse, which subsequently the student groomed and fed, it was possible at the end of three years to acquire some understanding of medicine, as far as it was then known. Moreover, the demands on the practitioner's skill were not very great in those days. The people as a rule led healthy out-of-door lives, were not crowded together, did not suffer from foul air, nor very much from hereditary taints. There were no severe injuries due to rapid modes of travel, and the complicated surgical operations and the finer differential diagnoses of the present day were not even dreamed of. A shrewd old practitioner could make by the apprenticeship system out of a bright student a very fair doctor. On the other hand a careless, ignorant, or eccentric practitioner might make out of a stupid or mentally ill-balanced student a very dangerous doctor. There was no uniformity about the result, and there was a confused mixture of practitioners varying from the absolute ignoramus and fraud up to the physician who had obtained the best possible education in a foreign school, all equal in the sight of the law.

Naturally, such a condition of things soon became intolerable and the State was obliged to regulate the practice of medicine by law. In March, 1797, a law had been passed "to regulate the practice of physic and surgery in this State." The purpose of this act being to forbid anyone to practise physic or surgery or to administer medicines or to perform surgical operations unless he produced satisfactory evidence to the Chancellor, one of the judges of the Supreme Court, a Master in Chancery, or one of the judges of the Court of Common Pleas within this State that he had studied physic or surgery, or both, with one or more reputable physicians or surgeons for the term of two years, and obtained from the officer of the court a certificate under his hand and seal to that effect, which certificate must be filed in the County Clerk's office.

Of course this law was of little value. The mere fact that a man had been studying medicine with a doctor for two years was no evidence that he had acquired any medical knowledge whatever, nor were the judges capable of passing on his medical attainment; so that at the beginning of this century there was no legal restriction worthy of the name on the practice of medicine.

In April, 1806, a very important and valuable law was passed by the legislature. This law authorized the formation of county and state medical societies and prescribed both the manner in which they should be organized and their functions when organized. It authorized these societies to examine medical students and to confer upon them a diploma which was likewise a license to practise. But the law provided that no medical society "shall proceed to the examination of any student in order to license him to practise until such student shall have produced satisfactory testimony that he has regularly studied physic or surgery, or both, as the case may be, with one or more reputable practitioner or practitioners for the term of three years." The law further provided that if anyone practised physic or surgery without a license thus obtained he could not "collect any debt or debts incurred by such practice in any court of this State."

This was far from being a perfect law, but it was a great gain for the profession. It gave them an opportunity to form a legal organization, of which they promptly availed themselves, and it imposed upon them the duty of satisfying themselves that a man was properly qualified before he could become a legal practitioner. Under this law the medical societies became the sole judges as to whether a man could become a legal practitioner or not. Even physicians holding diplomas from medical colleges could only receive a legal license to practise from the county and state medical societies. These societies found that many of the men under the apprenticeship system were well educated in the medicine of the day. But the great defect in this system was that the student could not acquire a sufficient, practical knowledge of anatomy and could not witness a sufficient number and variety of surgical operations to make him capable of performing them himself.

So evident was this defect that, notwithstanding the difficulty of obtaining cadavers for dissection, schools of anatomy conducted by one or two men sprang up all over the country and were well attended. The state and county societies from their inception took a very active interest in medical education and did what they could to improve it. Indeed they were organized, in great part, for this purpose. Thus, in 1810 the State Medical Society sent a circular to the County Medical

Societies in which among other recommendations is one "that each county medical society do appoint two or more lecturers, whose duty it shall be to afford such instruction in any of the branches of the healing art as may meet the approbation of the society by which such appointments may be made."

A private medical school was started in Albany in 1821 by Dr. March, at which time there were fourteen students. The circular of the school for 1833, at which time it appears to have been most prosperous, gives the names of fifty-one students and a faculty of six teachers. This school flourished until Drs. March and Armsby succeeded in organizing the Albany Medical College and in obtaining a charter for it in 1839.

It was in just this spontaneous way that the medical schools throughout the country sprang into existence. The State authorities did not take the initiative in the matter. They did not select suitable places in the State in which they located and endowed schools; although they did occasionally grant small sums of money to encourage schools already started. Thus between the years 1841 and 1849 the Albany Medical College received from the State the sum of twenty thousand dollars. Medical schools throughout the country were started by the private enterprise of a few energetic and progressive doctors wherever they happened to reside. Many such schools started in this way gradually grew weak and died, either passing out of existence entirely or being merged into other schools. Thus in New York State there are now in existence twelve duly incorporated medical schools while seventeen such duly incorporated medical schools have become extinct during the century, and there have been at least four other schools that were illegal.

The different branches of medicine were naturally very unequally represented in different schools depending upon the knowledge of the men who happened to found them. There were no traditions behind most of these schools, although some of them were more or less remotely modeled on the foreign schools in which some of the faculty had been educated. As an example of this foreign influence may be mentioned that until the time of its reorganization in 1792 the University of Pennsylvania required before graduation the writing of a thesis in Latin. A requirement singularly out of place in a country where it was of the first importance to educate sturdy practical physicians to practice in a rough pioneer settlement remote from the fine arts and learning.

The Albany Medical College in its early years was not very different from Dr. March's Medical School and was evidently intended

to supplement, not replace, the system of apprenticeship. The course of lectures was of sixteen weeks duration only, leaving in each year thirty-six weeks for private study and for work with the preceptor. It is interesting to note that as late as 1849, ten years after the organization of the Albany Medical College, the medical faculty of Harvard University sent to the committee on education of the American Medical Association a statement,* signed by Oliver Wendell Holmes, Jacob Bigelow and John Ware, to the effect that it was not advisable to extend the lecture term beyond sixteen weeks and giving an extended argument in favor of this view. But the college work has continued to steadily expand and in spite of this elaborate argument the lecture term at Harvard is now thirty-eight instead of sixteen weeks.

The expense of attending this short term of the Albany Medical College, at a time when money was worth more than it is now, was relatively very high. The fee for the course of lectures of sixteen weeks was seventy dollars and there were extra fees for matriculation, graduation, dissection, etc.

The number of professors (every teacher was a professor) in the Albany Medical College during the first thirty years of its existence was only eight, sometimes falling to only six, and the same is true in the early days of all the medical colleges in the country; for in 1849 the Albany Medical College and the University of Pennsylvania were the only two among the thirty-eight medical colleges in the United States that had as many as eight professors.

Lectures were given on the theory and practice of medicine, chemistry, materia medica and therapeutics, obstetrics, physiology, (which was then included in the Institutes of Medicine,) medical jurisprudence, anatomy and surgery, but it was taken for granted that the student would get sufficient practice in obstetrics and clinical medicine with his preceptor, and no practical work in these branches was done in the school. The work in the school was directed especially to surgical operations, which were performed here in this amphitheatre, for there was no hospital in Albany in those days. A list of the operations performed each course was published in the catalogue. Great attention was given to anatomy and dissecting, the material for which had to be obtained, often from such a long distance as Boston, by the expenditure of much time and money and sometimes at some personal risk.

Thus, from the fact that the medical school was only one factor in a complex course of medical study in which the practical work was in great part furnished by the preceptor, the strength of the schools was

* Trans. Am. Med. Assoc., vol. II, 1849, p. 353.

devoted to anatomy and surgery. Consequently these studies in the subsequent development of the schools inherited, as it were, an undue prominence, which they have never completely abandoned and which they have, it seems to me, in most medical schools to-day. It is only when a great school is founded, like the Johns Hopkins Medical School, which has no direct traditions behind it, that the different branches can be given their due relative importance.

From all that I can learn, therefore, the function of the Medical College at the outset was to supplement the teaching of the preceptor. Anatomy and surgery were taught with some degree of completeness and were taught practically, while the other lectures were purely didactic, were intended to guide the student in his reading, to teach him right methods of thinking and to point out to him what to observe when he saw actual cases of disease; but you must remember that neither professors nor students at that time had any but the vaguest ideas of physical examination and of how to report a case of disease. The same lectures were repeated each year. No matter how many years a student attended the school he would hear each year the same lectures very slightly modified.

In this way the school ran on without change for many years. In 1849 the Albany Hospital was opened and the teaching of surgery and medicine was thereby improved. In 1854 the students began to have an opportunity of working in the chemical laboratory, in addition to listening to lectures on chemistry. A little later there was some mention made of a medical clinic, in addition to the surgical one, but it is not until 1866 that a definite mention of clinical lectures in medicine held in the hospital is made in the catalogue. The duration of the course continued to be sixteen weeks, and practically there was little or no change made in the methods of instruction in the school, nor any increase in the number of its teachers during the first thirty years of its existence. But, carried along by the strength and vigor of the great men who were its founders, the school continued to do good work in spite of its methods, which were becoming antiquated and insufficient. At the end of the thirty years, however, Dr. March died. In 1874 Dr. McNaughton died and both these distinguished men were quickly followed by the other founder of the college, Dr. Armsby, who died in 1875. I might well pause here to speak of the debt of gratitude which the college owes these men, but it is my purpose to deal with the methods of instruction in the college, not with the teachers, whose praises have already been sung in previous addresses, especially in the eloquent historical address of David Murray at the semi-centennial anniversary of this college.

By the loss of these men the faculty of the college was greatly weakened, and the younger men in it were conscious that the methods of teaching were insufficient. Even while Dr. Armsby was living there were three or four years of uncertainty and of attempt to enlarge and change the course of instruction, during which time men came from New York and from the neighboring cities to lecture in the school, and in 1876, the next year following his death, the school was entirely reorganized on its present plan.

It is not a very rare occurrence that men by means of their wide reputations, their vigorous intellects and their enthusiastic temperaments can carry on an undertaking successfully with antiquated methods. But at their death men of equal strength of intellect and character must quickly modernize their methods or the undertaking will surely fail. So it was with the Albany Medical College after the death of Dr. March. Such a crisis has come, I fancy, in the life of almost every medical college. Its organizers being of about the same age have usually died nearly at the same time, and the young men of the faculty have suddenly awakened to the truth that the old methods were no longer of use to them, and that very radical action was necessary if the life of the college was to be saved. Indeed, I believe that the development of the course of instruction in the Albany Medical College, which I am here tracing, would serve with very little change for that of any other of the older medical colleges in the country.

The plan according to which the school was reorganized was radically different from that on which it had been founded. At its origin the school was intended to supplement the work of the preceptor, but during thirty years the old times had changed, conditions had greatly altered and from the time of the reorganization it was essential that the preceptor should merely supplement the work of the school. Even at the present day in this school we still retain the preceptor as taking part in the education of the medical student. Although his part is a very subordinate one, and although in very many schools he is no longer recognized in the catalogue, yet we are glad to feel that, in addition to the school work, each student has a wise preceptor to guide his reading and to give him opportunities for practical clinical work.

With the idea of making the school furnish a complete medical education with little or no assistance from the preceptor, the length of the term was increased at the reorganization from sixteen to twenty weeks. Since that time it has been steadily lengthened until it is now thirty weeks. The number of teachers was immediately increased

from eight to sixteen and has steadily increased until now there are over forty teachers, or one teacher to every five students.

Many important branches, which had steadily grown in prominence since the school was founded, were, at the reorganization, for the first time, embraced in the plan of instruction. The most important of these were histology and pathological anatomy. This department ably managed from the very outset has expanded so rapidly that it has now outgrown the capacity of the college building and must be carried on in the Bender Hygienic Laboratory. The next most important addition to the curriculum was that of physical diagnosis, which has also had a rapid growth, until now you receive complete instruction in how to examine every portion of a patient's body and all his different organs with the aid of many different instruments, and to examine his excretions and secretions with the aid of the microscope and chemical reagents, and all this you are now trained practically to do with your own hands, ears and eyes.

Besides these two important additions, the scarcely less important specialties received recognition, and instruction was given in ophthalmology, otology, laryngology, dermatology, neurology, psychology, gynaecology, pediatrics, etc. The instruction in all these branches, introduced for the first time into the school at its reorganization, has broadened each year until now much time and many teachers are devoted to them.

Besides this immense increase in the amount of instruction given there was also a great change in the manner of instruction. The necessity for some didactic teaching was recognized, but it was felt that the student must be given much more clinical work, especially as the preceptor was passing from the field of action. From the outset much time was given to clinical surgery and especially to clinical medicine, and the teaching of the specialties was almost entirely clinical. Each year since the reorganization more and more time has been devoted to clinical work. Last year the senior class was divided into sections of half a dozen men to allow of more intimate clinical instruction (the juniors having been so divided in studying physical diagnosis during a number of years), and this system of subdivided classes is certain of a great extension in the future.

One inheritance from the old method of instruction prior to the reorganization interfered seriously for a time with this improvement in the curriculum. This was the fact that the same lectures were repeated each year and the belief (made strong by long and ancient custom) that the course of lectures should be so arranged that every student should have the opportunity of attending every lecture given

in the school. With the great increase in the number of lectures given this system became each year more and more impossible, but it was only a few years ago that this inherited and cherished belief was finally abandoned. It may be that certain lectures are so important and so difficult of comprehension that the student must hear the same lecture at an interval of a year before he can grasp it in its entirety, and it may be that hereafter in this school the same lecture will be given to the same class on successive years. This, however, is now a mere question of expediency and the long cherished belief that a class must hear the same lectures twice on the majority, or at least on a considerable number of subjects, because that has been the tradition of the school is at last, I believe, after long conflict, laid at rest.

Finally, at the time of the reorganization, the faculty made a great step in advance by compelling the student to pass a preliminary examination, or to give evidence of some school training, before entering the college, and thus prevented perfectly ignorant men, who could never possibly be a credit to the profession, from commencing the study of medicine. This preliminary examination was made more severe each year until 1893, when, to our great satisfaction, the State took this matter off our hands and now requires, as you probably know, the passing of a pretty stiff examination before the study of medicine can be commenced. The State has also decided to require after January 1, 1898, four years of medical study instead of the three years which it has required for nearly a century. Next year the Albany Medical College will gladly provide a four year's course of instruction for its students. Thus, at the end of the century, as at its beginning, the State has enacted wise laws to improve the quality of its medical practitioners.

There is one important branch of medical knowledge which was not in existence when the college was reorganized, but which has developed with marvelous rapidity and has extended into every branch of medicine and, at the present day, dominates the whole. It is bacteriology. It is with great gratification that I can announce that, through the generosity of Mr. Mathew W. Bender of this city, a beautiful and well equipped building—the Bender Hygienic Laboratory—has been constructed at a cost of nearly twenty-two thousand dollars. This laboratory has been thoroughly equipped with the most approved apparatus and fixtures by the faculty of this school at an additional cost of six thousand dollars. The faculty have further assumed all the expense of running the laboratory, so that this commodious and fully equipped building is at the service of this college for purposes of instruction. In it you will be able to do all your microscopic work

with the greatest facility. You will have an opportunity of acquiring as complete a knowledge of normal histology, pathological histology and bacteriology as you can possibly desire; for the faculty have been fortunate in securing the services of a most excellent teacher. I trust that you, the first class to enjoy these great privileges, will derive much profit from this course.

But the Bender Hygienic Laboratory is not merely for the instruction of students. It is a place where original investigations are to be carried on, where truths, which will advance medical knowledge and explain medical science are to be discovered. And here we see the Albany Medical College entering upon the last and highest stage of its development. Henceforth it is not only to be a school for medical students, it is to be a source, a fountain of medical truth.

Certainly from its foundation and especially since its reorganization the teachers in this college have enriched the medical literature of the country by many valuable contributions of permanent worth. But now we have a laboratory founded for the express purpose of original investigations, and this cannot fail to incite research and literary activity in every department of the college. Material, which has been wasted on account of want of opportunity to properly investigate it, will henceforth be more carefully treasured, observed, studied. The college and this laboratory will unite in an effort to advance medical knowledge and in striving to do this the college will surely become more effective as a teacher.

You must all agree with me, I think, that in building this laboratory Mr. Bender has done a noble deed for scientific medicine and for humanity; a deed sure to be productive of good and one well worthy of emulation. Personally in discussing with him the plans for this building, I have had a rare pleasure in observing the gentleness and simplicity of manner, the kindliness of heart, and the earnestness of purpose which characterize the true and modest gentleman who is the founder of this laboratory and whose name it bears.

The city of Albany may well be proud of those two beautiful buildings—the Dudley Observatory and the Bender Hygienic Laboratory—standing side by side on Lake Avenue, twin sisters in the service of science. In one of these buildings the observer looks upward through his telescope at the *infinitely great* and gathers from the motions of the planets and the stars knowledge, which has alone made possible navigation and commerce, without which our present civilization would be impossible and which has enriched the world in countless ways. In the other building the observer looks downward through his microscope at the *infinitely small* and gathers from his

study of the germs of disease knowledge, which enables him to cure, to bring health to the sick and joy and peace of mind to the friends. Already this has been in a large part accomplished and the world is receiving benefits daily from such laboratory work. We honor, and rightly honor, as best we may, the heroes and benefactors of the world. Shall we not honor him who in his quiet laboratory, far from the sight of men, unknown, uncared for, devotes his life to the study of the causes of disease, who is constantly striving to find some means which will enable him to spread abroad from his laboratory the knowledge that shall stop the pestilence in its course and bring into homes darkened by the shadow of death joy and sunshine? Shall we not honor him whose love of his fellow men and whose far-sighted, intelligent generosity has made it possible that such results may be accomplished? May we not hope that the beautiful building may always remain as a worthy monument and that the benefits to humanity which emanate from it both in the well educated doctors and in the scientific truths which it sends forth into the world may perpetually rise as sweet smelling incense to the memory of Mr. Mathew W. Bender.

Thus, we have traced in general outline the changes that have taken place in the method of medical education in this school and State during this century. We have glanced back over a wide field, bearing the rich harvest resulting from the earnest, zealous labors of many able men, whose work has not died with them, and we have seen that the elaborate medical instruction which you enjoy seems to have developed spontaneously out of the needs of the profession with little or no interference from outside. There have been no violent breaks nor abrupt transitions in its slow and gradual development. Yet in this quiet way medical instruction has passed in the relatively short time of a hundred years* from a most rudimentary condition to its present complex state.

We have seen that early in the century the apprenticeship system was supplemented, at first, by a short course of instruction in some private anatomical school, and that these schools were gradually merged into incorporated colleges; that the lectures in these colleges, at first almost purely didactic, have insensibly passed into those of a more clinical character, until finally the work in the schools has come to consist in great part of laboratory work and of clinical work done by small groups of students under careful guidance. We have seen that in consequence of the lengthening of the school term and of the

* Such a rapid development would have been impossible were it not for the continuous influence exercised by the foreign schools—French, German and English—on the American medical students who subsequently became teachers in American schools.

essentially clinical character of the work done in it the school has very gradually, but at the same time very completely, usurped the functions of the preceptor, and thus we have passed from one extreme to the other, from the preceptor to the fully equipped medical college, with its departments for original research, from instruction by one man with general medical knowledge to instruction by a multiplicity of men with specialized medical knowledge. There can be no question but that the latter is by far the better method of instruction, and yet, with an abundance of special and clinical work there is still need of the general didactic lecture, lest in becoming too highly specialized the student may lose sight of the unity of medicine.

You have much more to learn than did your forefathers, but you have much better facilities for learning than they had. We shall lay your task before you. It is immense, but it is attractive. May you seize upon it with enthusiasm and master it.

Hospital Cars.

NEW PLANS DEVISED TO RELIEVE THE INJURED.

A hospital car is the latest development in the way of rolling stock for railroads. The first one has been put in operation under the direction of Frank H. Caldwell, chief surgeon of the Plant system, and is a miniature hospital on wheels. It is expected that the idea will soon be adopted by every railroad in the country. On the railroads there have been relief cars, intended simply for the transfers of injured employes and passengers, but the belief has always been strong that no actual hospital would be practicable. Now, whenever there is an accident on a road, the hospital car is at once hurried to the scene and the victim may receive the same treatment as if he was in a city institution.

With the coming of the new car there will be no delay in the relief of a sufferer, for even operations may be performed while in transit; and this, too, under the most favorable conditions. It is generally conceded in railway circles that this is a humane, economic and up-to-date idea that will be the means of saving many lives.

There are two general divisions to the hospital car, what might be called the ward and the operating room, with a small room for consultation between them. Each of these in the car which has already been built, and after which others are to be modeled, in an ideal of compactness and completeness. Because of the limited room it is necessary that every possible space-saving device be used, as well as to have every detail as perfect as art and science can make it. The car

itself outwardly has much the appearance of an ordinary baggage car. It is strongly built and decorated in the simplest style. It is within that the wonders are to be seen.

The ward takes up something more than a third of the interior, and is a bare upholstered room. It is fitted with half a dozen wrought iron beds with wire woven springs. The legs of the beds rest on heavy, broad, corrugated rubber tips on the floor of the car. These soften the jolt and jar of the train and prevent the beds from slipping. By a unique arrangement these beds are hinged so that when not in use they can be fastened against the wall and be entirely out of the way. These beds are taken down one at a time as needed for sufferers, or for the purpose of airing. Besides these there is an air bed of the most approved pattern.

This can be folded into a very small compass and placed in a closet especially made for it, which also answers for a chair. When needed, it takes but the work of a moment to drag the bed out and inflate it. Among the other things in the ward is a hammock made to hang from the roof of the car by strong straps. Connected with the hammock is a device of short spiral springs, so delicately constructed as to prevent any jolt or jar of the car being communicated to the occupant. A new form of stretcher will be used to transport the sufferers to and in the car. It is of cypress, light, springy, yet strong and durable.

It is made a few inches narrower than the car door, in order that two standard car cushions may just fit it, which will give additional comfort and protection when desired. The covering of the stretcher is of heavy duck on wire netting. The netting and duck are fastened to the frame with strips of cloth, screwed on, and easily removed and cleaned. The stretcher is much more elastic than that in general hospital use, being especially adapted to the motion of the train.

In the centre of the car, between the consulting room and the ward, is the operating room, which is the joy of all surgeons who have in years past been compelled to contend with the crude methods of attending to the injured in railroad accidents.

This in the majority of cases made the necessity of an operation a thing to be deplored owing to the inadequate means at hand. The operating table is of iron, with a glass top, with all necessary appliances for the performance of perfectly aseptic operations and the prevention of shock. There is a large tank filled with sterilized water, sterilizers and all necessary apparatus. Bedding is packed in a corner cupboard, while in another, in the centre of the compartment, chloroform, ether, bandages and such essentials are kept.

Inside and out the car is painted with a specially prepared paint, which may be scalded without injury and which will stand disinfection by means of superheated steam or air. In this way all danger of disease germs lingering about the car is done away with.

With all its perfection the cost of the car is far less than that of an ordinary passenger coach. The latter, according to modern demand, must be finished in the finest and most expensive woods, of various and harmonizing varieties, while the furnishings must be of the most luxurious sort. There must be curtains of rare textures, Brussels carpet and a hundred and one things that the public demand, yet rarely seem to notice unless they are absent. All this adds to the cost. With the new hospital car there is nothing but what is practically needed for the saving of life, or for the comfort of the injured, so that its first cost is estimated at \$4,000.

In operating a system of hospital cars the railroad will be divided into sections of two hundred miles and a car assigned to each section. The permanent station will be in the middle of each section, and thus one hundred miles in either direction will be controlled.

It is estimated that when the system has become complete and far reaching at least one-half of the danger and suffering resulting from improper care and attendance in railroad wrecks and collisions will be done away with, and also the payment of thousands of dollars in the way of damages will be saved the railroad companies.—*The Argus*.

The Albany Medical College.

THE SESSION FOR 1896-87 OPENED WITH APPROPRIATE EXERCISES.

The Albany Medical College opened its '96-'97 session to-day, with a class as large as, if not larger than, in any previous year. Up to noon seventy-five new pupils had registered.

The school assembled in the amphitheater shortly before twelve o'clock, and fifteen minutes later the members of the faculty headed by Dr. Vander Veer and the Rev. Dr. A. V. V. Raymond, the president of Union University, took the seats in the pit.

Dr. Vander Veer introduced the Rev. Edward G. Selden, pastor of the Second Reformed church, who offered prayer.

Dr. Raymond was then introduced and made a brief address. "In no department of life, no profession," he said, "is there such a demand for facts, for truth, as in medicine; so it seems the first work would be to familiarize yourself with the facts of things."

He spoke of the work before them and in conclusion said: "I hope, gentlemen, that you will follow the example of Him who was the greatest physician."

Dr. Henry Hun delivered an address which tracing the gradual development of the methods of medical education in the Albany Medical college and in New York state during the nineteenth century, will be found elsewhere in this issue.

Transportation Arrangements for the Mexican Meeting of the Pan-American Medical Congress.

Dr. H. L. E. Johnson, 1400 L street, N. W., Washington, D. C., has been elected Chairman of the Special Committee on Transportation. All communications relative to rates, reservation in the special trains, etc., should be addressed to him.

A rate of one fare for the round trip has been secured between St. Louis, New Orleans, and other trans-Mississippi points and the city of Mexico. It is confidently expected that this rate will be extended over the entire territory of the United States. Arrangements are in progress for splendidly equipped special train of sleeping and observation cars with first-class dining car service. Dr. Johnson will presently be in position to announce a rate which will include railroad fare, sleeping and dining car service both ways and in the City of Mexico, and covering the expense of various side trips to the most important historic points in the Republic.

CHARLES A. L. REED,
Secretary International Executive Committee.

The Annual Meeting of the New York State Association of Railway Surgeons, under the presidency of C. S. Parkhill of Hornellsville, will be held on November 17, 1896, at the Academy of Medicine, New York City.

C. B. HERRICK, Secretary, Troy, N. Y.

Low Temperature Pasterization of Milk.—Dr. Rowland G. Freeman recommends the Pasteurization at a temperature between 65 and 70 degrees C., for the following reasons: It destroys almost all the ordinary air bacteria which occur in milk. It destroys the bacillus tuberculosis, the bacillus typhus, the bacillus diphtheria and many other pathogenic bacteria. It causes no change in the taste of the milk, and avoids those chemical changes which are produced by higher temperatures.—*Archives of Pediatrics*.

THE Albany : Medical : Annals

REPRESENTING THE

Alumni Association of the Albany Medical College.

HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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ANNOTATIONS.

The Silver Craze.—As a foretaste of what may be a common occurrence, we print the following from one of our advertisers, a very shrewd business man, who writes as follows: “Referring to the way of advertising which you suggest I already submitted to our board a proposition of this kind, which you made to me, at the time I had pleasure of seeing you in Chicago, but they don’t like to advertise in this way, and just now, they requested me to limit the advertising expenses as much as possible, because we don’t know how the anarchists of the Windy City will turn out in November, at the time of the elections. You will understand quite well, that if we have to pay for our goods in gold and get fifty-three cents in silver for one dollar of gold, we will be in such a bad fix that we have to reduce still more of our advertising expenses in order to meet all emergencies. I don’t believe that we can do anything new in the way of advertising between now and the end of this year. We are cautious people and we never do anything which we are not sure we can carry out.” — *The Journal of the American Medical Association.*

Cessation of a Medical Journal in Havana.—The *Revista de Ciencias Medicas*, of Havana, closes its eleventh and last year with the June number. The farewell editorial pathetically states that the management is compelled to this decision by “the circumstances through which the country is passing, the general scarcity of resources, the dispersion of the noble medical family, the absence of beloved friends whose co-operation has been so valuable to us, but especially as the immediate cause, by the assessment levied upon a periodical devoted to the publication of scientific matters. “Stronger and more

solid structures have fallen, men of prominence have been overwhelmed, family after family ruined, and happy hearts deserted; the disappearance of the Revista is merely an incident in the general ruin and desolation on all sides."—*The Journal of the American Association*.

Viewing the Internal Organs.—At the International Physiological Congress, held early this month at Munich, there was an exhibition of the "X" rays which fairly eclipsed all previous ones. The body of a man was submitted to the action of the rays through an apparatus of special design, which enabled the spectators to closely observe the action of the diaphragm, heart and stomach. The experiment was entirely successful.—*Medical Record*.

The Old World's Centenarians.—A German statistician has studied the census returns of Europe to learn a few things about the centenarians of the Old World. He has found, for instance, that high civilization does not favor the greatest length of life. The German empire, with 55,000,000 population, has but 78 subjects who are more than 100 years old. France, with fewer than 40,000,000, has 213 persons who have passed their 100th birthday. England has 146; Ireland, 578; Scotland, 46; Denmark, 2; Belgium 5; Sweden, 10; and Norway, with 2,000,000 inhabitants, 23. Switzerland does not boast of a single centenarian, but Spain, with about 18,000,000 population, has 410. The most amazing figures found by the German statistician come from that troublesome and turbulent region known as the Balkan Peninsula. Servia has 575 persons who are more than 100 years old; Roumania, 1,084, and Bulgaria, 3,883. In other words, Bulgaria has a centenarian to every thousand inhabitants, and thus holds the international record for old inhabitants. In 1892 alone there died in Bulgaria 350 persons of more than 100. In the Balkan Peninsula, moreover, a person is not regarded on the verge of the grave the moment he becomes an centenarian. For instance, in Servia there were in 1890 some 290 persons between 106 and 115 years, 123 between 115 and 135, and 18 between 125 and 135. Three were between 135 and 140. Who is the oldest person in the world? The German statistician does not credit the recent story about a Russian 160 years old. Russia has no census, he says, and except in special official investigation the figures of ages in Russia must be mistrusted. The oldest man in the world is then, in his opinion, Bruno Cotrim, a negro born in Africa and now a resident in Rio Janeiro. Cotrim is 150 years old. Next to him probably comes a retired Moscow cabman, named Kustrim, who is in his 140th year. The statistician says the oldest woman in the world is 130 years old, but neglects to give her name or address, possibly out of courtesy, or in perhaps in view of the extraordinary

figures which came to his hand from the Balkans he thought a subject only 130 years old was hardly worthy of particular mention.—*Medical Review*.

The Size of French Families.—Francisque Sarcey, commenting in the *Cosmopolitan* on one item of the last French census, says that in France not only large families rare exceptions, but when met with they are sure of being ridiculed rather than admired, and no theatrical joke is more certain of applause than “the appearance on the stage of an Englishwoman followed by fourteen or fifteen children, ranged in regular gradation like steps of stairs. Fecundity is in French mothers of families a sort of blemish. When a young wife presents her husband with an heir, it is bad enough; if a second comes, she is pitied; if a third is on its way, those interested are angry, and the indifferent keep away; if a fourth — oh! there will be an explosion of indignation against the tyrant of a husband of pity or of ridicule for the wife. But never fear, they are not likely to expose themselves to it. Among the middle class, and especially among the Parisian middle class, families with one or two children are the rule. There has just been founded, under the presidency of Mme. Destillon, a league, the object of which is the encouragement of large families.—*Medical News*.

Age of Consent Advanced in South Carolina.—Section 2460 of the general statutes of South Carolina of 1882, defining the crime of having carnal knowledge of a woman child has been amended by changing the age from ten to fourteen years, and providing that where the woman child is over ten years of age the jury may recommend mercy and the penalty shall be reduced to imprisonment for a term not exceeding fourteen years. — *The Journal of the American Medical Association*.

Preservation of Microscopic Specimens.—Tores (Centralblatt für allgemeine Pathologie und pathologische anatomie) describes a method, which he has tested for a year and a half, of preserving organs and tissues so that they retain the color they had when fresh. He finds that five to ten parts of a forty per cent. solution of formalin alone cause the organs after a time to assume a taint which differs very considerably from the natural color, but that if, instead of water for diluting the commercial formalin solution, a solution of one part common salt, two parts of magnesium sulphate, two parts sodium sulphate in one hundred parts water be used, the color of the blood well preserved. Further, material preserved in such a solution is adapted for subsequent microscopic examination, since the protoplasm of the cell is less altered and the nucleus stains better and more deeply. The method he adopts is as follows: The materials must be not too long

washed in water, and should be left in the formalin solution for a period depending upon their size and thickness. A kidney or spleen requires two days' immersion, and the solution should be changed once or twice, or until the formalin solution no longer gives a dirty brownish-red color. Care must be taken to bring all portions of the object into contact with the solution, and the object must be given the shape which it is to retain permanently, since the formalin solution causes it to assume a consistency such that its shape cannot afterwards be modified. In the formalin solution the organs change color and become of a dirty bluish gray. On now placing them in ninety-five per cent. alcohol the normal color returns. Before permanently placing the organs in the alcohol it must be washed with alcohol until the latter no longer becomes cloudy. The material must not be washed with water; it is left in alcohol for a varying time until the normal color has again fully returned; if left longer the alcohol removes the color. For a kidney or spleen twenty-four hours will be sufficient. The permanent preserving fluid is equal parts of glycerine and water; the material floats, at first, but sinks later; the color is now at its best; after a little time the fluid becomes yellowish and requires renewal. Tissues so preserved have not undergone the slightest alterations in color during nine months. The method is not applicable to the preservation of any other color than that of blood; thus icteric is not well shown.—*International Medical Magazine*.

A Barbarous Exhibition.—A correspondent of the British Medical Journal describes an exhibition which is attracting large crowds of morbid spectators in Paris: "A man is attached by a cord around his neck to the ceiling. He is dressed in a blouse, with a red muffler around his neck. His head is bent toward his chest. His face is thin and bony, and appears convulsed; his eyes are almost shut; his veins are swollen and the complexion is ashen. The arms drop down at a little distance from the body; his hands are contracted, the fingers bent. The veins are so swollen that they seem on the point of bursting. The legs hang straight and stiff. This barbarous spectacle is served up with an accompaniment of music. It is observed when the music strikes up the hanging man is seized with painful convulsions. In this position he will remain thirteen days; after that trial he will remain buried three hundred and sixty-five, and will then take his place among the living. The rest the man takes in the hanging position consists of leaning against a ladder, which is placed in position to permit him to doze without in the least changing his attitude. During this time he is rubbed with a sedative lotion and inhales ether. No food of any kind is taken.—*Medical Record*.

A Hygienic Sewing-Machine Treadle.—An improvement to the sewing-machine is announced, which will be joyfully welcomed by all of us who have working women as patients. The old treadle, with its up and down movements of the entire limb, and wearying, cramping strain directly upon the muscles of the calf and front of the thigh, and indirectly upon the lumbar region, is to be abolished, and its place taken by a hanging platform, swinging pendulum-fashion. Upon this the foot rests easily and is swung backward and forward, the momentum being furnished mainly by the weight of the foot alone, instead of by that of the entire limb as before. The thigh remains almost motionless, and the economy both of effort and discomfort is most decided. Either foot can be used alternately or both together, thus giving relief from the monotony of the constant movement. — *Medical News*.

Nordau's Method of Work.—Dr. Max Nordau's name was originally Dudfield, and Nordau was at first simply a pseudony, which, with the consent of his father, he afterwards legally assumed. He lives in Paris above a wine-shop and here is his description of his modes of work: "I spend my day in paying visits to my clients and receiving visitors. In the intervals I attend to my journalistic duties, for I am the Paris correspondent of the *Vossisch Zeitung*, of Berlin, and I also contribute to the *Frankfurter Zeitung*, writing on all subjects. It is not till after dinner, that is to say, at about half-past eight, that I sit down to my table to write books. I then write till eleven o'clock, or midnight, as the inspiration goes. When I set pen to paper I am sure of the last word of what I am going to write as I am of the first. But I find it hard to sufficiently concentrate my mind at first, and the work of the first hour is about equal to the work of a quarter of an hour later."—*Literary Digest*.

New Method of "Doctoring" Milk.—It has been discovered that milkmen in Bordeaux, France, were in the habit of using certain yellow powders to preserve their milk. M. Deniges succeeded in obtaining possession of three sample of this powder and subjected them to chemical analysis. "This analysis showed that two of the powders were composed wholly of neutral chromate of potash, that the third was a mixture of one part of bichromate of potash and two parts of neutral chromate, and that the suspected milk had been adulterated with the latter in the proportion of 0.30 gm. to the liter (5 grains to the quart). The alkaline chromates are powerful antiseptics, capable, even in small quantities, of retarding lactic fermentation if not stopping it entirely. But because of the pernicious action of these salts on the organism they ought to be completely excluded from food substances and particularly from milk, of which many young children drink

relatively large quantities. These chromate powders are sold in packages of 2 gm. (30 grains) each of which should suffice to preserve about fifty quarts of milk, which would correspond to 0.01 gm. (0.6 grain) of antiseptic to the quart, evidently a minimum proportion. But it is likely that the milkmen will be induced to augment this quantity either because it is insufficient to preserve the milk during the high temperatures of summer, or in order to restore the color of the liquid, due normally to hemolutein, a yellow pigment, when it has been lessened by skimming the cream, adding water, or by inferiority of quality, and thus to cause a mediocre product to pass for a milk of a greater value." Knowledge travels rapidly, and even American milkmen may not be above such practices. Let us hope that the inspector may be as canny.—*Medical News*.

Medical Quackery in Paris.—Quackery has come to be more profitable than the legitimate practice of medicine with a large class in Paris. The other day a gentleman whose rooms are crowded from morning till night with patients, was threatened with prosecution for exercising the profession without a diploma. Being thus brought to bay he confidentially displayed to the officials the necessary document. He, however, implored the authorities to keep the diploma secret, explaining that if his clients had an inkling that he was a veritable physician his gains would diminish. M. Paul Cassagnac makes even a more remarkable disclosure, and vouches for its authenticity. He asserts that there is a house in Paris in which patients are received for the purpose of undergoing sham operations. They have been induced to believe that they are suffering from some organic complaint which can only be cured with the knife, and they betake themselves to this establishment, which has been particularly recommended to them. On the day appointed for the so-called operation they are put under chloroform and a few make-believe cuts and scratches are inflicted. In certain medical circles there is a regular name for men who practice these tricks on the victims of some imaginary ailment. — *Cable to New York Sun*.

Celluloid Bandages.—Lenderer and Kirsch, (*Centralblatt of Chirurgie*. No. 29) have experimented with celluloid as a substitute for plaster of paris in bandages. The weight of such a bandage is less than half that of one stiffened with water-glass. It is said to be not very expensive. According to the authors a jacket costs in Germany about five marks (\$1.25), which is no real objection to its use when one considers that, if well made, it will last for months, and presents the further advantage of a smooth surface, readily cleaned, and is impervious to urine and other discharges.

Its application is as follows: The sheet celluloid is cut into small pieces and dissolved in a close stoppered bottle in acetone, enough of the fluid being used to rise four times as high in the bottle as the celluloid. This solution of celluloid is rubbed into each layer of the gauze or crinolin bandage or jacket, an ordinary kid glove being worn for the purpose, as the celluloid otherwise dries on the skin, and can only be washed off by acetone. For a jacket at least ten layers are necessary; for a bandage from four to six layers, according to the strength required. The outer layer is smeared with a coating of the celluloid which forms, when dry, a highly polished surface. It takes three or four hours for a celluloid bandage to dry. That is considerably longer than is the case if plaster of paris is used. In order to permit of ventilation small holes may be punctured in the jacket wherever necessary. —*Medical News*.

What Is An Accident?—A physician of Essex county, New York, while driving between Hayne and Ticonderoga, was overcome by exhaustion arising from an injury sustained a year previous. He stopped his horse and proceeded to give himself a hypodermic of morphine. His horse started suddenly and the needle was driven further than he intended. Cellulitis ensued and he was disabled for twenty-two weeks. He brought suit against the Interstate Casualty Company, which had insured him "against bodily injuries sustained through external, violent, and accidental means." The presiding judge of the Circuit Court of Essex county dismissed the complaint. The Albany Court of Appeals, by a majority of three to two, decided that the jury should have been allowed to determine whether the injury was accidental or not. The court held that the injury could not be called accidental, if it was caused by the morphine or by the uncleanness of the needle.—*Medical News*.

Wholesale Lead Poisoning.—The Rome correspondent of the *Lancet* relates a curious instance of widespread lead poisoning, especially in Milan, caused in an unusual way. It seems that the sausage manufacturers have to pay the usual tax on salted articles. As an evidence that this tax has been paid every sausage is ticketed with a leadened seal. When so labelled the sausages are distributed to the dealers, and by the latter are sold to the public, in most cases already cooked, the heavy leaden seal still remaining attached. One may readily divine the consequences. Most sausages contain salts, such as nitrate of potassium, chloride of sodium, etc., besides this, the intestine used as their envelope is washed with vinegar, or even moistened in wine, which also in turn becomes acidulated, all of them substances which in contact with oxide of lead produce poison of varying

intensity. In this state the sausages are consumed by a large public, native and foreign, while the liquor in which they have been cooked — a liquor charged with the salts indicated — is distributed to the poor. It was only after analysis at the municipal laboratory of Milan that the extent of the mischief was realized. The manufacturers are memorializing the communal and civic authorities to replace the leaden seal by another made of some innocuous metal. Meanwhile, the origin of the unpleasant abdominal symptoms, of which there have been so many complaints recently, has now been discovered. — *Medical Record*.

Women and Medical Societies.—A persistent effort has been made by the women physicians of London to gain the right of membership in the medical societies after being repulsed by the Royal College of Physicians and Surgeons, they tried the Pathological Society, but with the same lack of success. The Medical Press says that it had hoped the Pathological Society would rise above such petty professional jealousy and fear of successful rivalry; “but the sexual hyperaesthetic had it all their own way, and as they are imprevius to reason and argument the ladies must e’en wait until these become too infirm to attend the meetings or until they are old enough to be superannuated. It is worthy of remark that fellows whose voices are never heard and whose form are unknown under ordinary circumstances within these hallowed precincts, invariably turn up to defend the society which they profess to cherish, but which they never frequent, from the moral contamination involved by the presence on terms of scientific equality of the new order of practitioners. Science is sexual, and the relief of human sufferings knows no distinction of persons. Women, as practitioners of medicine, labor under many inherent disadvantages, but this is not a sufficient reason for refusing to the more diligent and gifted among them free scope for their unemployed energies. Just as we natually respect the man who has fought his way to the front in spite of opposition and difficulties, so we ought to regard the women who, in spite of physiological burdens and social discouragemnt, has acquired the right to be enrolled a member of an honorable and humane profession.”—*Medical Record*.

The Blood in General Paralysis.—Capps, in the American Journal of Medical Sciences, June, 1896, has an interesting and scientific article on the condition of the blood in general paralysis. He not only cites the work, done by others in this direction, but by tables, charts and histories shows the result of his own thorough investigation of the subject. The conclusions he reaches are as follows:

General Paralysis. 1. The hemoglobin and red corpuscles are always diminished. 2. The specific gravity falls slightly below the

normal. 3. Most cases show a slight leucocytosis, amounting on an average to about 22 per cent. above the normal. Early cases may have no leucocytosis, whatever. 4. In the differential count a decrease is found in the lymphocytes along with a marked increase in the large mononuclear cells. The eosinophiles in a few cases are very numerous.

Convulsions and Apoplectiform Attacks. 1. The red corpuscles and homoglobin are usually increased at the time of a convulsion. During an apoplectic attack of long duration they are both somewhat diminished. 2. The specific gravity is variable, sometimes increasing, sometimes diminishing, at the time of an attack. 3. There is a leucocytosis after convulsions and apoplectic attacks which is as sudden as it is usually pronounced. It certainly does not appear until within a very short time preceding the convulsion, probably not before the latter actually takes place. 4. The degree of leucocytosis and the period of its continuance, as a rule, vary directly with the length and severity of the attack. 5. In the production of the leucocytosis the large mononuclear cells are increased relatively more than any other variety. 6. The fact that after convulsions and apoplectic attacks in general paralysis, there is not only an increase in the number of white cells, but a change in their character, as shown by the differential count, and at times abnormal cells appear, is an argument against the theory that leucocytosis is merely a change in the distribution of the white corpuscles. — *Medicine.*

The Indigestion of Breast Babies.—The August number of the Edinburgh Medical Journal contains an article by Dr. James Carmichael, who says that, for many reasons, less attention has been paid to the gastro-intestinal affections met with in breast babies than in those nursed artificially. Breast milk is the natural, and ought to be the sole food of the infant, under physiological conditions, during the first year of life.

In inquiring into the causes of indigestion in breast babies, it may be assumed that in a healthy child nursed by a healthy mother, it rarely, if ever, occurs. The conditions which lead to a departure from normal conditions, and which injuriously affect the child, are numerous. A certain group of causes which may affect both mother and child simultaneously are defective hygienic conditions generally, such as unhealthy, low-lying, and damp dwelling houses, noxious effluvia from drains, or malarious poison. Under such circumstances both mother and child are apt to suffer unless removed from the injurious influences. As it is to the mother specially that we have to look when the child suffers, any departure from normal health is apt to affect her milk supply.

Whenever the milk of the mother is defective in quantity or quality, the child is apt to suffer. It does not thrive or grow at the normal rate. Instead of being plump and firm and happy, it is soft and flabby and is always crying, and never appears to be satisfied. Its skin is harsh and dry. The tongue is somewhat red, often slightly furred. Vomiting is not infrequent from gastric catarrh. The stools are unnatural, and present various appearances depending on the quality of the milk. They are generally loose, and seldom have the natural mustard color or consistence; but are usually pale, and often of an ashy gray color, sometimes greenish or mixed gray and green. The soft curd of the mother's milk is present, undigested, in little granular-looking masses. There is an excess of mucous secretion, sometimes little streaks of blood. As a rule, the indigestion of mother's milk is more frequently intestinal than gastric, diarrhoea being more common than vomiting. This, says the author, appears to be largely due to indigestion of the fatty and proteid elements of the milk. Infants, in regard to their digestive capabilities, are but little men and women, and it is certain that they have their idiosyncrasies likewise. The milk of a mother seems to be suited to her own child under physiological conditions. It has been proved over and over again that a child who is thriving on its own mother's milk if put to another may suffer, even though the woman is healthy and her milk is found on analysis to be of good quality. This is one of Nature's mysteries which it is difficult to explain, he says, but yet remains as a fact demonstrated by observation and experiment. It shows how subtle and delicate the nutritional relations are between mother and child. If this is so in natural feeding, it helps to explain the difficulties which are encountered when the child is artificially reared.

With regard to the management of indigestion generally, it is well to ascertain the cause, and look to the mother and her habits. The breast, the milk, and the evacuations of the child should be carefully examined. In this way a conclusion as to the cause of indigestion may be reached. If there is any disease, functional or organic, of a persistent nature, the case must be considered in all its bearings, and a decision come to as to the possibility of continuing lactation with any prospect of success.

The occurrence of menstruation requires careful consideration in regard to nursing. Analyses show that during the menstrual period the milk is deteriorated in quality and gives rise to more or less disturbance, often of a trivial nature, in the child. On the cessation of the menstrual flow there is generally a return to normal conditions as regards the quality of the milk, so that menstruation in most cases is

not a bar to nursing. It may come on a few months after lactation has commenced and not recur for several months, so it is undesirable to wean the baby if it can be avoided on the occurrence of the first menstruation. It is a very different matter when pregnancy occurs. In this case it is necessary and desirable that the child should be weaned.

The diet and regimen of the mother during lactation is of the first importance. It must be borne in mind, continues the author, that the whole process is a physiological one, and that a healthy mother requires really no special treatment during the nursing period. She ought to take her usual food, a plain and mixed dietary, and have a due amount of open-air exercise. A good nurse generally has an excellent appetite and digestion, and is usually able and ought to eat a somewhat larger quantity of food than at other times, and probably a shorter interval between meals may be advisable. She should have a late meal, and in the early morning some soup, or a glass of milk or cocoa and a biscuit or bread and butter. It is desirable that a mother in good average health should fulfil the maternal duty of nursing her child if possible. Many mothers are too apt to seize the opportunity, if anything is wrong, to give up nursing, and in this they are influenced by the father, who ought to be out of court in such matters. Medical practitioners are apt in many cases to give in to the wishes of the parents in this respect instead of encouraging the mother to nurse her child and counseling patience and rational treatment with a view to improve the milk supply. Dr. Ballantyne considers it the physician's duty to encourage mothers to nurse their children if there is no distinct contra-indication. Inquiry must be made into the habits and hygienic conditions under which the mother is living. The milk must be examined, and will not fail to give valuable information. If it is deficient generally in quantity, he says, endeavor to inspire hope in the mother that she may yet be able to nurse her child; and if her appetite and digestion are good, advise her to take an increased quantity of the lighter and more quickly digested nutriment, with plenty of liquid. If she has too much milk, the fluids must be reduced and the solids increased. Irregular suckling must be prohibited, as a common cause of indigestion in the infant. If chemical examination of the milk shows increase or diminution of the proteids, fat, or solids generally, prescribe accordingly. To increase the solids, give the child the breast more frequently, prevent the mother from overtaxing herself, and do not let her drink too much. To decrease the solids, order longer intervals between the nursings, more exercise and a larger amount of fluid nutriment. Increase of fat indicates the need of less animal food

in the dietary. Diminution of fat requires a larger quantity of animal food. The most certain way of regulating the amount of proteids is by muscular exercise, allowing plenty of exercise if the amount of proteids is too large, and decreasing the amount of exercise if they are deficient.—*New York Medical Journal*.

Tasteless Quinine Sulphate A Swindle.—Some time ago a substance which was claimed to be tasteless quinine sulphate was handed to me for examination. It was offered by a southern manufacturing house and was accompanied by printed matter setting forth its advantages over the bitter alkaloid, and showing that a number of western and southern wholesale druggists had accepted the selling agency for their respective territories.

The following description is copied from the label of a one ounce can: FLORA CHINA—"Pure Sulphate of Quinine, Antiperiodic. Antifebrile, Tasteless. Given in all Intermittent and Continued types of Fevers. Given in the same does as the old style quinine and wherever indicated. Manufactured by the Manufacturing Chemists,, Fla."

The following is an extract from a letter received from the introducers of Flora-China: "It is needless to expatiate upon the merits of our Flora-China—it is a sulphate of quinine, from bark, tasteless, it takes wherever shown, it gives satisfaction," etc.

A red circular with violet print gave the following interesting information: "Sir—Kindly give this sample of our quinine a trial; it will speak plainer for itself than easily gotten testimonials(?) or vague assertions in printed form. We only claim for it to do what the bitter quinine does—no more, no less.

"Upon its merits and your own judgment we depend for success. Remember it were folly for us to place on trial and waste our time and money on an article which would fail to accomplish the purpose this sample is intended for, to convince through your own experience that it does the work. Courteously, etc."

From the appearance, the substance in question might have been mistaken for an alkaloid. It occurred in the form of fine needle-like crystals, more translucent than those of quinine sulphate. It was odorless and tasteless, sparingly soluble in water, insoluble in alcohol and neutral toward litmus. Small quantities heated in a glass tube and on platinum wire respectively gave no evidence of volatilization, (excepting water), combustion or carbonization, which was conclusive evidence that the substance under examination was not a carbon compound.

On continued heating on a platinum wire in a colorless flame, the substance becomes more opaque and colored, the flame reddish yellow, indicating the presence of calcium. The aqueous solution gave a precipitate with ammonium oxalate insoluble in acetic, but soluble in hydrochloric acid (calcium). Another part of the solution gave a precipitate on the addition of barium chlorid T. S. insoluble in hydrochloric acid (sulphuric acid). A small quantity mixed with dry sodium carbonate and heated on charcoal in the reducing flame yielded sodium sulfid as was shown by bringing in contact with a bright silver coin, and also by the odor of H. S. on the addition of an acid (sulphate). An aqueous solution of the substance did not yield a precipitate on the addition of calcium sulphate T. S. (absence of Sr.). The addition of alcohol to an aqueous solution of "Flora-China" caused precipitation.

On carefully heating, it lost 21 per cent. of water of crystallization. Cryst. calcium sulphate, $\text{Ca SO}_4 \cdot \text{H}_2\text{O}$ theoretically demands 20.92 per cent. of water of crystallization.

It did not respond to reagents for alkaloids (Mayer's solution, etc.). "Flora-China" is therefore artificial crystallized calcium sulphate and does not contain a trace of quinine.

It was offered at the wholesale price of 50 cents per ounce in one ounce cans, down to 35c. an ounce in 100 ounce cans, while the intrinsic value of the preparation is not over 10 cents a pound.—*Notes on New Remedies.*

Need of Caution in the Use of Roentgen Rays.—Dr. W. V. Gage, of McCook, Neb., writes: "I wish to suggest that more be understood regarding the action of X rays before the general practitioner adopts them in his daily work. Several cases of alopecia and erythema have followed its use in Omaha and Lincoln, and in one case of my own, when the rays were utilized in trying to determine the presence of a foreign body in the stomach of a child, erythema and finally sloughing took place, leaving a lesion over the region penetrated by the rays, which is at present the size of the hand.—*Medical Record.*

Bacteria and Aerated Water.—Professor Frankland, in Nature, shows the fallaciousness of the prevalent idea that by drinking aerated water safety from infectious disease is insured. In experiments by Salter, the number of bacteria varied from 200 per cubic centimeter with 15 grams of carbon dioxide per liter, to 2,000 with 6 grams per liter. The spores of the anthrax bacilli have been found to survive 154 days in aerated water, but the cholera bacilli cannot live longer than three hours. The typhoid bacillus requires a period of two weeks to insure its destruction. The author recommends storage for a certain period, as time is thereby given for the destruction of the pathogenic bacilli by the innocuous forms.—*Medical News.*

READING NOTICES.

OFFICE OF CHR. XANDER, Washington, D. C.

Germania Wine Cellars, Hammondsport, N. Y.

Dear Sirs:—Upon your request, I have great pleasure to state that in the course of years during which I have supplied my customers with your Imperial Sec Champagne, I have invariably found equableness of quality and condition in the successive lots sent me and handled by me.

What perhaps I have not mentioned to you, although I may at the time have told your traveler, Mr. Engel, is that the test I made years ago with your Imperial Sec demonstrated the thorough soundness of that wine, and *that* mainly induced me to prefer it to other brands. This test was to leave a fraction of the wine in a pint bottle, corking it lightly, and observe constantly, of course, after the carbolic acid had disengaged itself. My observations continued on one pint bottle in this manner for at least nine months, demonstrated that no acidification had set in and the rest of the wine in the bottle remained as sound as it had been in the beginning.

It is natural to infer that a wine so well proportioned, and without a trace of overwhelming acids should be extremely wholesome and never cause souring of the stomach. As many physicians constantly order your Imperial Sec for delicate patients, it must be on their experience that your wine can conveniently take the place of the expensive French Champagne, which, especially in cases of poor families, are rather inaccessible, and be the sickness ever so severe, your wine *does* take the place of the foreign brands with equal effect.

You may use these my assertions and experiences, for they testify simply to the high character of an honest wine.

Yours truly,

CHR. XANDER,

By Pohndorff.

Astringents in Diarrhoeal Affections.—In many of the diarrhoeal affections occurring during the warm season of the year, it is necessary to resort to the use of intestinal astringents before the profuse and exhausting discharges can be checked. Usually some form of tannic acid is resorted to, as tincture of kino or catechu, but unless these be given in large doses, they will exert but little astringent effect. The reason for this is that tannic acid is absorbed in the stomach and upper portion of the intestinal canal, so that but a slight amount reaches the site of the disease which is usually in the lower portion of the intestine. The disadvantages of giving tannic acid and its preparations in

larger effective doses is that the stomach is readily disturbed a matter of importance since the appetite in these cases is generally impaired and the digestive functions at a low ebb. If, therefore, it be possible to administer tannic acid in such form that it will pass undecomposed and unabsorbed through the stomach, and exert its effect in the intestinal canal a much more powerful astringent influence on the affected mucous membrane can be secured. This possibility, according to many authorities has been realized in tannigen and acetyl derivative of tannic acid. This remedy is insoluble in the gastric juice, but gradually liberates its tannic acid under the influence of the alkaline intestinal fluids. Clinical observations have demonstrated that in acute and chronic gastro-enteritis, in dysentery and cholera infantum tannigen is a serviceable and reliable anti-diarrhoeal remedy, which is free from disagreeable taste and perfectly unirritating and innocuous. It can be confidently relied upon in cases which have resisted the customary remedies, and in the treatment of the diarrhoeal affections of children will be found of special utility.

Ferratin Feeds the Blood.—There is no empiricism in treating impoverished blood conditions with Ferratin; there is no guess-work. It has been physiologically proved by eminent authorities, such as Schmiedeberg, Filippi, Jaquet and Chittenden, that Ferratin is the natural form of iron absorbed and assimilated as “the reserve iron for blood-formation;” other tests have shown that without Ferratin the organism is not nourished and will expire; and the clinical tests of Germain Sés, Jaquet, Harold, Einhorn and hundreds of general practitioners have demonstrated that Ferratin increases Hemoglobin, appetite, weight, etc., and quickly restores good health.

FROM THE PROVIDENCE HOSPITAL,
WASHINGTON, D. C., March 25, 1896. }

I have seen almost marvelous results from the use of GRAY'S GLYCERINE TONIC COMP., Formula Dr. John P. Gray, in those cases of Nervous Dyspepsia and Asthenic Diseases, when all other Tonics failed in bringing back the appetite and a better digestion. As a good general Tonic I can recommend none better.

Very respectfully,

JESSE RAMSBURGH,
Resident Physician.

Endorsed also by the Garfield Memorial Hospital, Columbia Hospital and others, Washington, D. C. Prepared only by the Purdue Frederick Co., No. 52 West Broadway, New York.

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Appendicitis and Perityphlitis.

BY DR. SETH M. MERENESS, HEIDELBERG.

The literature of the diseased conditions of the vermiform appendix and its neighboring structures has increased very rapidly during the last decade, and together with the casuistics has become voluminous. Indeed, there are few general surgeons who have not expressed their views on the pathology and surgical treatment of this not uncommon and frequently fatal disease.

Physicians in private practice, however, who have to do with nearly all cases in the early period of the disease, seldom publish their experiences, and this fact makes it appear as if all cases necessarily belong to the surgeon.

This is the only excuse the writer has for increasing the literature of the subject. The cases, with but few exceptions, present nothing unusual, and are such as any general practitioner will meet with from time to time.

Collectively, however, they may be of some interest from the fact of having occurred *seriatim* in a private practice; were carefully observed during the acute manifestations of the disease and often for many years after, and were treated without recourse to surgical intervention. The latter circumstance in a few cases was due to necessity and not to choice. In fact, an operation was urgently advised in two cases, but was not allowed by the parents in one instance and by the patient in the other.

Fortunately both of these patients made a good recovery, but not until weeks of suffering had been endured and pyæmia with its dire consequences had nearly caused a fatal termination.

NUMBER.	AGE.	SEX.	DURATION.	TERMINATION AND RESULT.
1	22	M . .	10 days . .	Absorption—recovery since 6 years.
2	15	Fem .	7 weeks . .	Abscess opened in intestine—partial recovery.
2	15	Fem .	3 months .	Abscess opened externally—recovery—2 years.
3*	32	M . .	5 days . .	Absorption—recovery—5 years.
4	7	M . .	6 weeks . .	Abscess opened in intestine—recovery—4 years.
5*	12	M . .	3 weeks . .	Improvement—later recurrence.
6*	81	Fem .	11 days . .	Incomplete recovery since 4 years.
7	10	M . .	3 weeks . .	Absorption—recovery since 3½ years.
8*	21	Fem .	Indefinite.	Chronic appendicitis since 6 years.
9*	35	M . .	9 days . .	Absorption—recovery since 3 years.
10	23	M . .	13 days . .	Death from perforative peritonitis.
11	11	M . .	10 days . .	Absorption—recovery since 2½ years.
12*	76	M . .	7 days . .	Incomplete recovery—recurrence.
12*	76	M . .	2 weeks . .	Improvement since 2 years.
13	7	M . .	2 weeks . .	Absorption, recovery since 2 years.
14	5	Fem .	3 weeks . .	Absorption—recovery since 1 year.
15	17	M . .	36 hours .	Death from septic peritonitis.

NOTE.—Cases marked with * gave a history of one or more attacks of intestinal trouble similar to appendicitis.

It is not necessary to repeat here the comparatively short history, in point of time, of the so-called American disease, appendicitis, which as such has been known for only a few years; and of the longer known but indeterminate perityphlitis, which succeeded and was inextricably mixed with the ancient typhlitis.

Suffice it to say that in the light of modern pathology each term has its proper significance as a pathological entity, the symptomology of which is not always distinct. In fact, the ordinary syndrome represents a disease, the pathology of which includes often all three conditions.

There may be an inflammation of the mucous membrane of the cæcum corresponding with a local enteritis, which is properly typhlitis; or a similar inflammation of the mucous membrane of the appendix, when the term appendicitis is applicable.

The inflammation may take place around and in the tissues contiguous to the cæcum and may be properly designated as perityphlitis.

Each one of these conditions may exist separately and probably do in many instances, although in all cases of perforation of the appendix there must necessarily be inflammation of the tissues surrounding and contiguous to the cæcum. Hence in all well marked cases the term perityphlitis expresses the lesions which cause symptoms leading to a positive and accurate diagnosis, and for this reason is preferable to the definite but restricted term appendicitis.

It is also applicable to those rare cases due to traumatism or other lesions, which can not be differentiated from true appendicitis except after a section either *in vivo* or *post mortem*.

The pathology and etiology of the disease can be intelligently studied only by referring to all three lesions since according to recent authorities the disease is not so much a typhlitis or appendicitis, or even perityphlitis, as a combination of two or even all three conditions.

According to the view as expressed by Sonnerberg and Finkelstein* these various terms designate only different stages or localizations of the one pathological process. The first stage is nothing but a simple catarrhal inflammation of the mucous membrane of either the cæum or appendix, or both combined.

The cause of this catarrhal inflammation is not definitely known, but since the structure of the mucous membrane of the cæcum and appendix, according to Nicaïsse,† does not differ essentially from that of the contiguous intestine, it is reasonable to assign the same causes as is usually given as producing general catarrhal enteritis. Atmospheric influences, especially changes in humidity combined with a rapid lowering of the temperature; improper diet as regards quality of food and particularly the ingestion of material which is incompletely digested and undergoes fermentative changes in the intestine, or causes abrasions of the intestinal mucosa, as may be the case from the pericarp of unripe fruits, seeds and other foreign bodies.

The role of bacteria in producing catarrhal inflammation has as yet not been satisfactorily determined. When material undergoing fermentation is allowed to remain long in contact with a mucous membrane the latter becomes at first hyperæmic and later, if the irritation remains, inflamed. But whether the excitant is of an organic or chemical nature has not been conclusively shown. It is certain, however, that irritant inorganic poisons, such as chlorine gas, certain metallic salts, and the mineral acids, when applied to a healthy, living mucous membrane can cause all the phenomena of inflammation without bacteria being present. Moreover the simple presence of bacteria in the intestinal tract does not cause any known lesion when the intestinal mucous membrane is intact and normal.

It is probable then that inflammation of the intestinal mucosa, when caused by fermentative processes, is due to the poisonous toxins generated by the bacteria themselves.

Whatever the cause may be, once the cæcal and appendicular mucous membrane is inflamed the process passes through its various stages as it does elsewhere in the intestinal tract. In other words, the specific characteristics of a simple, primary catarrhal appendicitis or typhlitis differs in nothing except location from that of a catarrhal enteritis.

* Pathologie und Therapie der Perityphlitis, Deutsche Zeitschrift f. Chirurgie, Bd. xxxviii, 1894.
† Sur l'appendicite, Revue de Chirurgie, xvi, No. 5, 1896.

Simple acute intestinal catarrh is under favorable conditions usually recovered from and nothing pathological remains in the structure of the previously inflamed tissue, although it is quite certain that for a time at least afterward the mucous membrane is more susceptible to abnormal influences and readily becomes affected so that after the process has been several times repeated the membrane becomes hypertrophied, the secretion from the glandular structures is profuse and vitiated, and the conditions of a chronic enteritis are present.

In the latter event the membrane and its function may return to a comparatively normal state, or as frequently happens, becomes more and more involved until the glandular structure may be practically destroyed.

The environment and natural resistance of the individual to disease determines for the most part whether the disease is entirely recovered from or passes to the chronic stage. Thus it is that the disease is so prone to progress in the weak and cachetic, and especially in those who have been affected with scrofula, ricketts, chlorosis, or are ill nourished from any cause.

Under certain conditions, such as the presence of the bacteria of tuberculosis, or of pus formation, the inflammation may take on specific characteristics and become tubercular or purulent, and the earlier catarrhal process is lost sight of.

If the mucous membrane of the cæcum and appendix is similar in structure to that of the remaining intestinal tract, as has been stated, the function of the one and the position of the other are radically different. Thus the fæcal matter becomes semi-solid, or solid in the cæcum and remains for a longer time than in the small intestine; besides it acts as a reservoir for foreign bodies. This explains why typhlitis is not so completely recovered from, and is more prone to recur than inflammation of the neighboring intestinal tract.

The appendix is even more unfavorably situated than the cæcum on account of its cavity being closed at one end and the insufficient development of its muscular roots. Foreign bodies may remain in its interior for an indefinite length of time and constantly irritate the mucous membrane. Also the weak peristaltic action of the appendix favors the accumulation and retention of fæcal material and the formation of fæcal concretions.

The latter have been noticed so frequently in connection with disease of the appendix that there can be little doubt as to the intimate relationship between foreign bodies and perforative inflammation. It is doubtful, however, if the presence of a smooth foreign body like a fæcal concretion does often of itself cause a primary inflammation.

Autopsies have so often revealed the presence of fæcal material and of large concretions without disease of the appendix that there is no doubt but that foreign bodies play only a secondary role in many, perhaps most cases.

Rochez,* who states that most cases are caused by concretions, examined sixty-five and found almost without exception no foreign body which could serve as a nucleus, and concludes that they are formed in the appendix, a view which is shared by Sonnenberg† and many others. Talamon,‡ Nicaisse§ and others believe they are first formed in the cæcum and pass into the appendix.

Theoretically there is no reason why they may not originate in either; but the positive findings of foreign bodies, such as grape seeds in the appendix demonstrates that concretions can also enter from the cæcum.

Besides the presence in many instances of foreign material as a nucleus of the concretion makes it probable that the nucleus at least originates in the cæcum, passes into the appendix and increases in size. This may be believed *a fortiori* since the fæcal material which under normal conditions is found in the appendix is said to be fluid and constipation seems to be in many cases accessory to their formation.

The appendix in many instances is found to be congenitally abnormal. Lockwood and Rolleston|| found it so in thirty-three of one hundred cases. The abnormality consists of change in size or of its relative position in the abdomen. Of the more constant lesions, flexures, adhesions to peritoneum, structure and obliteration of portions of its cavity and saculation, are probably always the result of a previous inflammation.

The pathological conditions increase very much the chances of retaining a foreign body and thus of forming an enterolith which can not escape, and serves to retain the products of a purulent inflammation should this occur.

It is reasonable to believe that the lesions met with in all cases of perforative appendicitis and perityphlitis are secondary, and that there was at first a simple catarrhal inflammation of the mucous membrane, which was either primary or developed in consequence of an extension of a simple typhlitis. The mucous membrane never became normal after the first inflammation, structural changes were induced which altered the secretions, and when because of the retention of a foreign

* Des Calculs Appendiculaires, Revue Medicale de la Suisse Romande, No. 12, 1894.

† *Loc. cit.*

‡ Perityphlite et Appendicite, Paris, 1892.

§ *Loc. cit.*

|| On the fossæ round the cæcum and the position of the vermiform appendix. *Journal of Anatomy*, vol. xxvi, p. 130-148.

body or a stagnation of the contents of the cæcum and appendix, an opportunity was offered, the abnormal secretion aided the formation of a fæcal concretion which the feeble peristaltic action allowed to remain. Two important factors in the causation of a perforative appendicitis were now present, *viz.*, a catarrhal inflammation and a foreign body. The one indirectly caused the concretion to increase in size and on account of structural change to remain imprisoned, while the other served to irritate the mucous membrane and caused the inflammation to become constant.

This condition may continue with greater or less intensity for years causing but little apparent trouble, as was shown by Pepper,* who out of eighty autopsies saw thirty-three cases with well-marked disease of the appendix and where no definite signs had been presented during life.

The determining factor of a perforative inflammation had not yet appeared and pericæcal lesions were wanting. The causative factor was an infection of the mucous membrane by pyogenic bacteria. An infection which is favored by the abrasions caused by foreign bodies, and which has a tendency to spread because of the weakened resistance of the already diseased membrane and the suitable culture medium furnished by the pathological secretions.

The character of the lesion produced may vary from simple ulceration of the mucous membrane to gangrene of all the appendical coats, according to the intensity and duration of the infectious process. Large foreign bodies also aid the infectious process by causing venous stasis. The early capillary hyperæmia distends the tissues which close around the foreign body and thus the circulation is much restricted, a condition which favors an infection since, as is well known, there is no physiological condition which restricts the growth of bacteria as does an active circulation of arterial blood. Besides, the absorbent channels are closed by the pressure of the foreign body, and the poisonous bacterial products can not be eliminated and assist in destroying cellular vitality.

Many writers attach an especial significance to these circulatory disturbances as a cause of the rapidly destructive suppuration, and gangrene observed in some cases. Two conditions determine the rapidity and extent of the suppuration, *viz.*, the virulence of the bacteria and the resistance offered by the tissues to bacterial invasion.

As a result of the purulent inflammation all the coats of the affected portion of the intestine or appendix, as well as the adjacent peritoneum, become infiltrated and a condition of appendicitis with

* Diagnosis of pericaecal inflammation, Phil. Med. and Surgical Reporter, Jan. 1888.

local peritonitis or perityphlitis is present. The peritoneal inflammation, unless perforation occurs, is of the sero-fibrinous or adhesive variety.

At this stage under favorable conditions the infectious process may cease, ulceration of the mucous membrane goes on to cicatrization and the inflammation may subside. Also the pericæcal inflammation goes through its various stages and from organization of the fibrinous exudate adhesions are formed which alter the position and mobility of the appendix, restricts its peristalsis and frequently cause a binding together of the pelvic viscera, which remains during life. While, therefore, comparative recovery may, and often does, take place a complete *restitutio ad integrum* is of very rare occurrence.

When the infectious process does not cease the ulceration of the mucous membrane becomes more and more extended, the muscular and then the serous coats of the appendix becomes involved, and finally there occurs a perforation with escape of fæcal and purulent material into the illiac fossæ. As a result a purulent cavity is formed in the pericæcal tissue, which when small may be absorbed.

Reclus* and many others maintain that the purulent material is never absorbed, but may be encapsulated. More often the cavity increases in size and secures an outlet through the contiguous structures. The contents of the abscess is then discharged externally in the abdominal, lumbar or inguinal region, or internally in the intestine or other viscera particularly in the peritoneal cavity.

The discharge of the abscess, when free drainage is possible, may allow cicatrization of the purulent cavity to take place and a permanent recovery to occur; or the pyogenic process continues and metastatic abscesses in various organs ensue. In other words, a sub-acute or chronic diffuse pyæmia is produced. When the abscess communicates with the peritoneal cavity a rapidly fatal septic peritonitis results unless adhesions prevent the septic material from diffusing itself, when the process for a time remains local.

From an anatomico-clinical standpoint the various lesions of the appendix may conveniently be divided into two classes.

I. Appendicitis catarrhalis:

(a) Acuta.

(b) Chronica.

II. Appendicitis ulcerosa:

(a) Simplex.

(b) Perforatus, seu gangrenosa.

* Traitement de l'appendicite aiguë, Gazette des Hospitaux, Nos. 117, 122, 1893.

The term perityphlitis represents class II. The so-called relapsing appendicitis may belong to either class and has no specific pathology, while the designation hyperacute and fulminating refer only to the time and intensity of the infection and are useful only from a symptomatic point of view.

Of the writer's cases seven belonged to group II and eight to group I. Those under group I recovered more or less completely, of which seven presented no abnormal lesions during several years. The remaining case gave a history of chronic intestinal and pelvic trouble for many years without the known occurrence of an acute attack. Seven cases belonged to group II, of which two died from perforative peritonitis; two others recovered completely after drainage of the purulent cavity through the abdominal wall or intestinal tract; the remaining three had many acute attacks from which they recovered incompletely and a tumor could be made out in the cæcal region, even between the attacks. As to age it varied from five to eighty-one years. The latter was a typical case of relapsing appendicitis and had many attacks during twenty years. She died five years after the recorded attack from influenza. Most of the cases occurred before the twenty-fifth year, as is shown in all statistics of the disease. Why this should be so is not clear unless the prevalence of catarrhal enteritis in infancy and childhood is the starting point of the affection. Indeed when it is considered how frequently children and particularly infants are attacked with inflammation of the intestinal mucous membrane; how often such attacks recur, and with what obstinacy the disease progresses, one may well believe that many cases of adult appendicitis originated in early childhood or infancy.

The symptoms of the disease may be characteristic and well marked, but very often are obscure. Many of the simple cases never come under the care of a physician and are scarcely noticed by the patient, since the only sign of a mild attack is a transient intestinal disturbance in which there is either constipation or diarrhœa and slight paroxysmal pain, together with a moderate rise of temperature. In chronic catarrhal appendicitis there may be in addition to these a feeling of weight and discomfort over the cæcal region with now and then an attack of intestinal colic. As a rule there is no rise of temperature between the acute manifestations. In general the symptoms do not differ materially from those of a simple local enteritis, where abnormal consistency of the stools, paroxysmal pain and abdominal tenderness are usually present.

In severe cases of catarrhal appendicitis and especially in perityphlitis the symptoms are for the most part pronounced, but modified

somewhat according to the stage of the disease. Abdominal pain is present in all cases. In the early stages it is diffuse and paroxysmal, not unlike intestinal colic; later it becomes localized in the right iliac fossa and radiates along the crural nerves to the genitals and right leg. Between the pain occasioned by an incarcerated hernia, illness and perityphlitis there is but little difference except as to locality. A physical examination in hernia and the early occurrence of stercoral vomiting in illness will distinguish these. In fact an early diagnosis from the pain alone is hazardous, as has been shown by autopsies after a supposed appendicitis, where the above-named lesions were found, together with a normal appendix.

At most all that can be hoped for during the first twenty-four or thirty-six hours is to diagnose a localized intestinal or peritoneal inflammation in the region of the appendix. To this end the writer believes that the recurrence of pain radiating from the iliac fossa along the sensitive nerves to the inner part of the thigh and knee, and to the genitals, is more characteristic than any other symptom except the exquisite tenderness of the abdomen in the appendicular region (McBurney's point). Occasionally one or both of these symptoms are wanting. Of the cases here recorded they were present in two-thirds of all; and in those where suppuration occurred later both symptoms were constantly present. Other early symptoms, such as nausea and vomiting, slight chills and rise of temperature are of themselves not characteristic or constant, but may serve to exclude simple intestinal, hepatic or renal colic, ileus and hernia.

Later in the disease, sometimes as early as the second day, when on account of pericæcal infiltration a resistance amounting to tumor is observed, the diagnosis becomes easy and certain. But this phenomena does not occur in the mild catarrhal cases and is often obscured in the severe cases by the gaseous distensions of the peritoneal cavity. Many times it does not occur until perforation of the appendix and septic peritonitis has taken place, after which a diagnosis is of little consequence to the patient.

When perforation has occurred, but the suppuration remains localized in the pericæcal tissues, the pain at first becomes continuous, and then gradually subsides. There will exist then all the general symptoms of suppuration, hectic fever, rapid pulse, recurrent chills and a rapidly increasing anæmia, all of which continue until the pus is absorbed, becomes encapsulated or is evacuated. When on account of perforation the purulent or septic material is thrown into the peritoneal cavity and septic peritonitis results, the symptoms are almost unmistakable. A prolonged chill, vomiting, very rapid pulse, profuse

perspiration, collapse, subsultus and muttering delirium, soon followed by the Hippocratic *facies* informs even the tyro in medicine that the end is near.

The most important stage of the disease to be promptly recognized is the occurrence of purulent infection. But since the initial symptoms of bacterial infection, representing the reaction of the economy to poisons generated, are tolerably constant and differ only in time and severity in the various infections, it follows that a diagnosis is at first difficult or impossible. Usually the chill is more prolonged, the pulse rate higher and the skin is bathed in perspiration, while the sensorium is more clouded and delirium may exist after the onset of suppuration.

In general, when a patient suddenly complains of paroxysmal abdominal infection, which has a tendency to localize itself over the cæcal region and to be transmitted from there to the right limb and genital organs, and where in addition to this there are symptoms of a mild infection, the physician may in all cases suspect an affection of the appendix and should watch the case closely in order that the onset of suppuration may at once be detected.

The prognosis is even more difficult than the diagnosis, in fact it should be always guarded. Often cases presenting the most serious symptoms are relieved in a few hours, as in appendicular colic, or in a few days. While the symptoms in others are very mild in the beginning, develop slowly and cause the patient and physician but little anxiety; soon, however, the patient passes into collapse with general peritonitis and the disease terminates fatally. Usually recovery may be expected in the simple catarrhal cases. When suppuration has occurred recovery is also to be hoped for, especially if surgical treatment is resorted to early. After the occurrence of general peritonitis recovery seldom takes place.

The duration is as uncertain as the termination and may be from a few days to many years. Acute catarrhal cases seldom show any symptoms after two weeks, while the majority of the rapidly fatal cases end by the third or fourth day. When an abscess has formed and is allowed to perforate externally or in the intestine the disease extends over several weeks or months unless the patient dies from pyæmia or exhaustion. After operation cases usually recover in a comparatively short time or end fatally in twenty-four or forty-eight hours.

Theoretically the treatment of appendicitis and its complications is quite satisfactory, but its proper application is still uncertain and will doubtless remain so, at least until some means of making an

infallible diagnosis is discovered, for on this often depends the success or failure of the surgical treatment. As is well known, the majority of uncomplicated cases go on to complete or partial recovery without surgical intervention. So long as the inflammation remains catarrhal in character, and ulceration or perforation has not occurred, the disease may be allowed to proceed under medical treatment alone. To this end absolute rest in bed and a restricted, fluid diet is necessary. The administration of a mild laxative, followed by an enema seems appropriate in those cases where constipation exists. The increased peristalsis favors the evacuation of the contents of the appendix and cæcum, and thus rids the diseased mucous membrane of the presence of irritating foreign bodies and pathogenic bacteria. Treves* considers this very important in preventing septic absorption. Where constipation has not existed or where diarrhœa is present a laxative is unnecessary, and where perforation has occurred is contraindicated. Sahle† advises against the use of laxatives and high rectal enemas in all cases, while McMurty‡ would administer both in the early stages, and Talamon§ would wait until the first acute symptoms partially subsided.

The nourishment of the patient may be accomplished by rectal enemata which should be resorted to whenever vomiting exists. Solutions of peptone, peptonized milk and converted starch may all be used with success. The addition of 1 gram tr. opii is believed to allay the rectal irritability, and is indicated where there is much pain. In case No. 10 no food was administered by the mouth for ten days. The nourishment was accomplished by nutrient enemata alone which consisted of 150 grams of peptonized milk, 10 grains converted starch, with the addition of 1 gram sodium chloride and 1 gram tr. opii. The mixture was administered every three hours and once in every twenty-four hours a copious clyster of warm water and soap was administered to clear the rectal mucous membrane of absorbed material. In the meantime the patient appeared much improved, although perforative general peritonitis had occurred on the second day of the disease, a fact which was positive because the appendix was passed by the rectum on the third day. The temperature slowly fell to 37.1-5 C, while the pulse rate had fallen from 120 to 88. Vomiting ceased on the third day and the distension of the abdomen was steadily decreasing, while the patient's strength had not perceptibly diminished. At the end of ten days peptonized milk was administered by the mouth and soon afterward vomiting occurred, followed by collapse and *exitus letalis* a few hours later.

* On Peritonitis, British Med. Journal, Feb. 3, 1884.

† Ueber das Wesen und die Behandlung der Perityphliden, Basel in 8, 1892.

‡ Inflammation in and about the head of the colon, Medical News, January 10, 1891.

§ *Loc. cit.*

The autopsy showed that the first perforation was in process of repair and closed. Adhesions had formed causing a stricture of the small intestine, and at this point was a fresh perforation which had allowed the intestinal material to escape in the peritoneal cavity and a fatal septic peritonitis followed.

The intense pain present in the early stages makes the administration of a sedative desirable, and opium or its derivatives seems alone to be efficacious. Many advise the use of large doses (2 grams of powdered opium in 24 hours), and continue it as long as the pain is present. The advocates of this plan hold that it not only relieves pain and stops peristalsis, but also prevents general shock. Others withhold it altogether or allow only small doses of morphia, and believe that large doses are contraindicated because they render the patient unconscious, cause obstinate constipation and prevent the excretory organs from eliminating the infectious poisons. Besides the semi-narcotism masks the symptoms of suppuration and perforation.

These arguments are certainly valid and the number of physicians who advocate large doses of opium are apparently growing less, while there is no surgeon to the writer's knowledge who is a partisan of the "heroic method." However, to alleviate suffering—and this is about all the physician can accomplish with active therapeutic agents—the use of small doses (.008 grams) of morphia every three or four hours is indicated.

It may be necessary at times to withhold even the small doses, as after the administration of a laxative or when the renal secretion is much restricted; and the administration of medium doses should from time to time be suspended in all cases in order to see how the patient is progressing.

In recent years the use of salines, particularly magnesium and sodium sulphate, is often advised in this disease as in general peritonitis, to produce fluid evacuations, and to deplete the inflamed tissue by causing serous transudation. This can be of value only in conditions of simple hyperæmia and does not prevent the consequences of an infection. Besides they increase very much intestinal peristalsis, which may not only prevent the deposition of plastic lymph and thus favor a perforation, but delays the reparation process in the inflamed mucous membrane itself.

The use of the various phenal derivatives, as acetanalide, phenacetine, etc., and of the cardiac depressant febrifuges, aconite, digitalis and veratrum, can accomplish no permanent good and only cause a temporary improvement at the expense of a paretic vaso-motor and cardiac function later on. Cardiac stimulants may be judiciously used

when the symptoms demand them or when they are grateful to the patient. Alcoholic solutions, caffeine, camphor and musk, either alone or in combination, may be given rather with the expectation of a temporary improvement than the hope of a recovery from their action.

When the quantity of urine excreted is much below normal diuretics are of much service. The poisons generated by the bacteria have a marked influence in diminishing renal activity, and this combined with the increase of toxic organic compounds in the blood, as a result of febrile metabolism, allows the economy to be speedily overcome. In most cases it is of paramount importance to maintain a normal urinary secretion and very often its increase is indicated. To accomplish this the alkaline carbonates, potassium acetate, squills and digitalis alone or combined will be serviceable.

It should be borne in mind that for the maintenance of diuresis the system should be fully supplied with fluid in order that the arteries and capillaries may be well filled, and a suitable arterial tension maintained. For this purpose alkaline mineral waters and solutions of the vegetable acids may be freely used, although plain water answers every requirement. When gastric irritability exists and the ingestion of fluid causes vomiting or unpleasant peristalsis water may be administered *per rectum*, from which it is readily absorbed.

Leube* recommends the energetic application of the ice bag or cataplasms over the cæcal region, using whichever is most agreeable to the patient. Theoretically there is very little to recommend either procedure. That the application of heat or cold to a structure, several centimetres removed from the inflamed tissue, having an entirely different arterial circulation and with a cavity filled with gas or fluid between, aids in the absorption of purulent material or causes an inflammation to subside, is scarcely to be credited. The application of a warm cataplasm is usually agreeable to the patient, certainly causes no harm, and has the merit of "trying to accomplish something."

Fraenkel,† Lennauder,‡ Wier§ and many others advise aspiratory puncture, not only when an abscess is known to be present, but in any case simply as a means of diagnosis and consider it a harmless procedure. Other surgeons think its utility as a means of treatment is doubtful, and only resort to it as a means of discovering the existence of purulent material after which an operation is done. And not a few

* Handbuch der spec. Pathologie und Therapie (Von Ziemmsen), 2 Auf. vii 2, 328.

† Ueber die Folgen der Perforation des Processus vermiformis und deren Behandlung. Deutsche Med. Wochenschr. No. 4. 1891.

‡ Ueber Appendicitis und ihre Complicationem vom Chirurgischen Standpunkt aus Behandelt. Samml. Klin. Vorträge N. F. No. 75.

§ On perityphitis and the early detection of suppurative peritonitis from perforation of the appendix veriformis. Medical News, Jan. 28, 1888.

object to aspiratory puncture under any circumstances. In theory it would not seem to be as harmless as has been stated. Indeed the plunging of a needle through a purulent cavity into the healthy tissue below must increase the risk of spreading an infection, while the perforation of a blood vessel with the same septic needle can not be looked upon as an entirely harmless procedure in the present epoch of asepticism.

Moreover, failure to find the abscess on account of the uncertain position of the appendix and of its perforation has been often met with, and even when an abscess is found it becomes necessary to undertake an operation since simple evacuation rarely brings about recovery. When fluctuation is already present it is insufficient, when not, dangerous; and even as an aid to diagnosis it may better be replaced by an exploratory incision which causes no more serious results than puncture, and has the merit of informing the surgeon as to the exact state of the abdominal cavity and of allowing him to continue the operation at once if desirable. Only when the administration of an anæsthetic is contraindicated should an exploratory puncture be made and then as a therapeutic means.

The surgical treatment of the disease has for its object the removal of purulent material on tissues which caused it, and securing a permanent cicatrix. The methods by which this may be done varies with the conditions met with and the individual ideas of the surgeon. Simple drainage of the abscess cavity and packing with antiseptic material, excision of the appendix with immediate or delayed closure of the wound, and other procedures are resorted to under various circumstances. Of these procedures and their technique the writer has no personal experience and leaves their theoretical consideration to the surgeons.

Of more importance from both a medical and surgical point of view is the determination of the time when, and in what cases, an operation should be performed. The uncertainty, at the onset, of knowing whether a case will be serious or not and the impossibility of determining even after the most searching inquiry what the nature of the inflammation is, and how far it has progressed, has been well stated by Perman,* and has led to the most diverse opinion.

Statistics obtained under various conditions are proverbially unreliable in medical science, and those bearing on the treatment of appendicitis are surely not an exception so much so that in many instances they are practically worthless.

* Einige casusistische Beiträge zur chirurgischen Behandlung der Appendicitis und Perityphlitis. Hygiea Band IV. S. 163-195.

Physicians produced statistics where under medical treatment alone from 85 to 90 per cent of all cases recovered, and pointed out the fearful mortality after operation as reported by the surgeons in which not more than one-third of the cases recovered. Naturally having in mind such statistics the physicians looked upon the medical treatment as being the proper one, but were usually quite willing, and even desirous of having the cases pass into the surgeon's hands as a last resort, although it must be confessed they considered the patient's chances as good or better if allowed to go on without operation.

The surgeon, however, was not wanting in his expedients to explain the high mortality after operation and was usually emphatic in the opinion that the operation was performed "too late." Thus the surgeon accused the physician of procrastinating and thereby sacrificing the patient's chances, while the latter considered the death of many cases as the result of premature surgical interference.

This was especially unpleasant to the physician since his reputation in a certain family or locality was not materially enhanced by the sometimes over-confident expression of the surgeon, who tacitly if not verbally gave the family to understand that had he been called a few hours sooner an operation would have been successful.

No doubt the criticism was in many, perhaps most cases, a just one and the physician realized it himself, but the question was, would the surgeon have been able to make a sufficiently accurate diagnosis at such an early date as to be certain that an operation was necessary. The physician had doubtless known of instances where the surgeon had delayed operating because of insufficient data for a diagnosis, although having seen the patient *ab initio* until it was too late. Besides, nearly all the cases after an operation died while many undoubted ones recovered without surgical interference.

The fact is the surgeon saw only the severe cases which had not improved in the first few days under medical treatment and would not have recovered under any circumstances, and considered the disease a very grave one which in all cases required an early operation. While the physician, who had placed the patient in the surgeon's care and who was usually present at the autopsy, was ready to affirm that the operation did not give the patient a fair chance.

Happily, thanks to the American surgeons, the more exact knowledge of the pathology and symptomology together with careful clinical experience has brought, and is bringing the physician and surgeon on common ground, from which both view the possibilities of medical and the necessity of operative treatment from one standpoint; that is,

the chances for relative vs. absolute recovery. Few surgeons maintain at the present time the necessity of an operation in all cases, and still fewer are the physicians who rely on medical treatment alone.

From the statistics of the last decade and particularly of Fitz* and Porter† it may be concluded that an operation is necessary in at least one-half of all cases, and that the mortality, even when an early operation is performed, will be from 12 to 15 per cent. There is probably no other disease on the border line between medicine and surgery that requires such thorough individualization, and for this reason no definite rules can be adhered to; but in general it may be said that an operation should be advised.

(a) In all cases where a purulent collection is known to have been formed in the pericæcal tissues.

(b) When a purulent collection can not be demonstrated, but where signs of perforation of the appendix exist.

(c) In all cases where there is a reasonable doubt as to perforation of the appendix or pericæcal suppuration, but where symptoms of general peritonitis are present.

(d) When after a reasonable time the patient does not improve under medical treatment, or in consequence of relapses life is rendered unbearable and the patient's vocation can not be followed.

On the other hand operation is rarely necessary and should not be undertaken:

(a) In all cases of simple, acute or chronic catarrhal appendicitis.

(b) While the symptoms indicate a purulent inflammation of the appendicular mucous membrane, but where perforation has not occurred and the presence of a marked resistance over the cæcal region shows the peritonitis to be localized.

(c) In all cases where perforation has occurred and has caused a diffuse septic peritonitis.

This latter generalization is contrary to the famous maxim of Lawson Tait, never to let a patient die from peritonitis without an operation. The fact is, however, that practically all cases of well marked septic peritonitis are fatal under any plan of treatment, be it medical or surgical, as Sonnenberg‡ admits when he says, "Absolut schlecht bleibt die prognose bei ausgesprochener, allgemeiner, septischer peritonitis. Auch die letzten sechs Fälle sind alle tödlich verlaufen."

* Perforating inflammation of the vermiform appendix with especial reference to its early diagnosis and treatment. American Journal Medical Sciences, Oct. 1886.

† A contribution to the study of the treatment of appendicitis. American Journal Med. Sciences, December, 1893.

‡ Ueber Operationen am Processes vermiformis Bericht über die Verhandlungen der Deutschen Gesellschaft für Chirurgie xxv. Kongress S. 115, 1896.

Malaria in Children.

BY WALTER G. MURPHY, EAST HARTFORD, CONN.

Read before the Hartford Medical Society, October 2, 1896.

In selecting the subject of "Malaria in Children" as the topic for this evening's discussion, I cannot hope or expect to present a paper replete with new or original facts or theories, or to give you any information on a disease with which you are all perfectly familiar. If I had any such ambition or desire I would have selected some entirely different subject, or, what is much more probable, I would not have written at all. But it seemed to me to introduce some such subject familiar to all and part of our every day work, as physicians, would be opportune and I hope desirable.

During the past year malarial diseases have been more than usually prevalent, although generally speaking, of a mild type and yielding readily to treatment. Malaria nowadays, in this climate, is not considered a particularly formidable disease. Most people have had experience with it and many keep a supply of anti-malarial remedies in the house, to be employed at the slightest notice of so-called malarial symptoms—lassitude, pains and aches, nausea, etc. Malaria of this form, often the scapegoat of the physician, when puzzled in diagnosis, and the satisfaction of the laity, is not a particularly exciting subject for the student of medicine. There are, however, certain phases of the disease which must excite the interest of the physician, and as he reads the theories of Lavavan, he must acknowledge that even in this much abused disease enough to interest and even compel his attention and study may be found. Particularly the manifestations of the disease in children. While not differing essentially from the disease in the adult, when fully established, its diagnosis is often a matter of some difficulty.

That malaria in the child should differ from the disease as present in the adult is consistent with our everyday experiences in clinical medicine. An eminent authority on children's diseases (Jacobi) has said that there is scarcely a tissue or an organ, which behaves exactly alike in the different periods of life, and research has proved that pediatrics does not deal with miniature men and women, with reduced doses and exactly the same diseases in smaller bodies. Many diseases are pre-eminently children's diseases, and it is unusual to find such diseases in adult life; others although present in the adult, and the cause may be the same, the manifestation of the disease in the child

may seem an entirely different affection. Such a disease is malaria, and we find the same peculiarity in pneumonia, tuberculosis, typhoid fever, rheumatism, diabetes and many other similar diseases.

That there is a great difference in the two periods of life is illustrated also, by the action of different drugs. Quinine is better tolerated in the child. Morphia must be watched and carbolic acid is often extremely dangerous, to the very young, even when given externally. Belladonna, hyoscyamus, arsenic and mercurials are relatively better borne in the child than in the adult.

In children we have a persistent development, increase and improvement, and many of the organs and functions are in a preparatory state. The adult is exposed to outside influence of life and habit that are entirely lacking in the child. The organism in the adult is less easily influenced by slight causes which in the child often produce most alarming symptoms, particularly in the digestive and nervous systems.

Malaria in children has of late years taken a more prominent position among recognized diseases, and as our knowledge increases we will find that malarial affections play a more important part in childhood, and its diseases, than at one time was thought possible. The literature referring to children is somewhat limited, but many very valuable additions have been made in the last ten or twelve years, notably by Holt, Koplik, Roach and Councilman.

Etiology and Pathology.—As early as 1717 Lancisi stated that malaria was due to parasites which entered the blood, and since his time other observers have demonstrated the same fact. Salisbury in 1866, Klebs and Tommasi-Crudeli in 1879, but it was Lavarani in 1881 who first accurately described the bodies found in connection with the red blood corpuscles, and to him most of the credit is due to-day, and his name ranks with Fränkell, Koch, Eberth, Loeffler and Israel. That the plasmodium malaria of Lavarani is present in the blood of malarial patients many observers have demonstrated, and associated with this has been noticed bacilli of the common amoeboid form, and in the irregular manifestations of the disease, small crescent-shaped bodies have been found whose action is as yet undiscovered. Enough has been determined, however, to establish the fact that malaria is undoubtedly due to a germ, but whether by recognizing this germ, we can place malaria in the same category with diseases proven by all conditions to be due to a distinct micro-organism is a question. The tendency is undoubtedly strong in that direction, as within two years Barelli of Rome claims to have succeeded in two cases in transmitting malaria by means of inoculation of the blood of malarial patients,

tertian form resulting from the blood of a patient suffering with tertian, and quartan from a patient with the quartan form. Delafield and Pruden deny that we can yet accept this, but whether we do or not now, we are certainly justified in recognizing the intimate relationship of the plasmodium malaria with the disease. Rotch of Boston fully accepts the germ theory and would entirely drop the old nomenclature of the disease as quotidian, tertian and quartan, claiming that these terms should not be used, as distinct types of malaria, being merely variations in the behavior of the parasite.

To me no phenomenon is more interesting or attractive than the development of the germ to its period of segmentation at the time of the chill, and Thayer describes the various evolutions of the germ, as it passes through its cycle of life and withal, in such an attractive manner that I will quote from his article quite extensively. If the blood be examined after the paroxysm small, round colorless bodies may be seen in the red blood disks. "These bodies examined in the fresh specimen show active amoeboid movements. A few hours later the organism will be found to have increased somewhat in size and to contain a few brownish pigment granules, which dance actively under the eye, the motion probably being due to undulating movements in the protoplasm. On the day between the paroxysms the bodies will be found to have half filled the erythrocytes. They are still actively amoeboid, and the number of pigment granules is considerably increased. The erythrocyte at this stage will be seen to be a trifle larger than its unaffected neighbors. On the day of the paroxysm the organism is found to have entirely filled and almost to have destroyed the erythrocyte, which is represented only by a faint pale rim about the full grown parasite. At the time of the paroxysm a change takes place. The pigments gather together in a more or less solid clump, while the rest of the protoplasm looks somewhat granular, and shows a suggestion of lines radiating outward from the centre. The lines become more distinct, until finally we see the central clump of pigment surrounded by from fifteen to twenty small ovoid or round segments, each one having a central more refractive spot. This segmentation of the organism is always coincident with the paroxysm and immediately following the paroxysm fresh hyaline bodies appear in the erythrocytes."

Koplik has often found more than one parasite present in the blood and has seen two or more generations of the parasite in different periods of development. By a study of the parasite he is able to explain those cases where there is an irregularity in the usual course of the disease. In the pure tertian, when only one parasite is present, a

paroxysm would occur once in forty-eight hours, the second day the patient appearing perfectly well. When two parasites are present the paroxysm would occur once in twenty-four hours, producing the double tertian or quotidian. In the pure quartan a paroxysm would occur once in seventy-two hours, two days intervening when the patient would have no symptoms. In the double quartan, two parasites, the paroxysm would take place in forty-eight hours. By the development of parasites on different days or hours, each generation requiring the full period of growth, irregular paroxysms occur and cause an infinite variety of symptoms. If a distinct paroxysm occurs one day and only vague symptoms or a heightened temperature the next, it would indicate that the second generation, although present, was weaker than the first.

Golgi claims to be able to differentiate the parasite of the tertian and the quartan and to determine those which become pernicious from those which never do.

As to the cause of malaria, it would be exceedingly interesting to review the many theories advanced from the time of Hippocrates to the present, explaining the poison of the disease. The use of marshy waters, marsh poison in the air, air contaminated by vegetable decomposition, infusorial life in stagnant waters, electricity, magnetism, cold and chill after great heat, heat and moisture and the bite of a mosquito have all been claimed by enthusiastic observers, as the cause of the disease. To-day most, if not all authorities, agree that the soil is the natural abode of the germ. That moisture is necessary for the development of the poison is well proven by Asche, and reports are common where malaria has appeared after floods and when it has disappeared after complete drainage of swamps. Excavations in cities built upon malarial ground are usually followed by epidemics more or less localized. Then certain geographical distribution of the disease has been noticed, as in our own Connecticut valley, where twenty years ago the disease seemed to sweep over the country in waves, disappearing one year to reappear the next.

The pathology of the disease in children does not differ materially from the adult. The spleen is enlarged and the liver of a slate color. The lungs show in the capillaries numerous cells and parasites. In the more chronic form anæmia is usually present. The spleen is enlarged and hard, and the kidneys pigmented.

Diagnosis.—It is in the symptoms and course of malaria that the greatest difference is noticed between the adult and the child. In the adult we expect certain definite symptoms, which are very rarely lacking; first the chill, then fever followed by the sweating stage, but

in young children we are apt to have curious and puzzling variations in any stage. It is not uncommon for malaria to so simulate other diseases that without the true condition in mind, mistake is easy. Rotch has noticed that while we may have more or less characteristic symptoms, representing the onset of the disease, they may disappear later to give place to symptoms, of entirely different diseases, such as bronchitis, affections of the bowels and many other affections, which continue until the true condition is recognized.

As a rule the chill is not present in children. Cases have been reported where infants, in the first week of life, have had well defined chills, but these are not common.

The second stage is usually the most severe, and this may come on very suddenly and with no premonitory symptoms whatever.

The third stage, of sweating, is not as common in the child, but does occur.

In highly nervous children a convulsion, at times very severe, may take the place of the chill.

Dr. Holt reports cases of severe lung complications coming on suddenly accompanied by high fever, in which the diagnosis of pneumonia was considered. The next day all symptoms would be gone, to return in the afternoon or the following day. A class of cases very alarming is when the cerebro-spinal system is especially affected. Such cases are not common, but are exceedingly important especially in differentiating from true cerebro-spinal meningitis. Such cases usually begin with convulsions, general and violent, coming on with each paroxysm. Rigidity of the neck and indication of pain, if the head be moved, contortion of the face, cries loud and frequent, pupils dilating and contracting, uninfluenced by light and vomiting, often projectile. After the second or third day the diagnosis is evident, but when first seen the true condition is not easily recognized. Swift has reported two cases in which he was mistaken, recognizing the malarial element after two days. Cases have been reported of typical torticollis undoubtedly due to malaria.

Two general classes of cases are the most common. The first present all symptoms of an acute and severe affection. The temperature is high, the pulse accelerated, the respirations rapid, the face hot and flushed, and the child is restless and uneasy or cries with pain, referred to the head or epigastrium, and vomiting is common. The tongue is coated with a thick fur in the centre, with the edges usually clear. A chill may precede these violent symptoms, or they may come on rapidly and without warning. After a varying interval from one hour to four or five the fever gradually subsides, although I have seen cases

in which the temperature dropped, in a half hour to normal, unaccompanied by sweating. These attacks occur usually in the afternoon, and the next morning the child seems much improved, although not entirely well.

A peculiarity often noticed is that while the child presents all symptoms of an acute disease and the temperature may be 104 degrees or higher, there is lacking that severe character and prostration so common in diseases like pneumonia.

A second class of cases are just the opposite of these described. The child instead of being restless is quiet and languid, taking no interest in his toys; he is apt to be sleepy. The temperature may be normal or nearly so, and the pulse rate not particularly elevated. The face is pale, with dark rings under the eyes and the skin often feels cool. There is no pain. On questioning the mother, we will find that after remaining in this condition for a time, he will brighten up and act more like himself, although he is apt to be so again the following day. The appetite is poor and the bowels constipated or there may be more or less diarrhoea. Quite recently I had a little patient, under my care, who developed a well marked gastro-enteritis, with high temperature, which continued each day until the condition was recognized and quinine prescribed, when all trouble ceased.

The one distinctive clinical symptom of malaria is the periodicity of the paroxysms. In children we may have most unusual and puzzling demonstrations of the disease, but the diagnosis is comparatively easy if the characteristic regularity of the paroxysm is noted. A thoroughly satisfactory and scientific method of diagnosis is the examination of the blood, for the germ, and that the methods now employed are reliable, is fully demonstrated by an interesting case reported by Forchemen. This case was one of atypical typhoid fever in which, as there was a strong tendency to an intermittent type of fever, the diagnosis of intermittent fever had been made, corrected by the repeated failure to find the plasmodium and in which the patient finally died of perforation of the intestine. Typhoid was demonstrated by autopsy.

Treatment.—In considering the treatment of malaria quinine is first thought of and rightly so. As yet no drug has been suggested which will entirely fill the place so long held by quinine. Experiments prove that when quinine is used the natural development of the plasmodium malaria it retarded or checked, and if full doses are employed, a few hours before the time of the expected paroxysm, the disease is often rapidly terminated. In prescribing quinine in children the disagreeable, bitter taste is a drawback often difficult to overcome. In

older children the prepared pill or tablet may be used, or the bitter taste may be disguised to a certain extent at least, by giving the drug in cold sweetened coffee, in jelly or in syr. licorice. The quinine chocolate, except in very mild cases, I have not found satisfactory. In younger children a suppository containing quinine may be given per rectum and in infants inunctions often act exceedingly well.

One peculiarity often noticed in treating children is that it is not necessary to anticipate the time of the chill by a full dose of quinine as in adults. In children the drug is quite as effective when given in small doses at intervals of two or three hours, or even three or four times in the day; the dose to be determined, of course, by the age of the child and the severity of the symptoms. Warburg's tincture is often employed and seems to act exceedingly well when quinine does not.

As to the hypodermic administration of quinine, it is so seldom indicated that it is not often employed, but it is well to bear in mind, particularly when quinine irritates the stomach and satisfactory results are not obtained by administration in other ways.

Arsenic and iron are very valuable in long continued cases where anæmia is a complication.

Of the newer remedies methalin blue seems best to stand the test of extended trials. Ferrira reports excellent success in protracted cases in children, giving four to seven and one-half grains in twenty-four hours.

Smoking and Intellectual Labor.—Dr. Drysdale, writing to the British Medical Journal, apropos of certain recently published statistics of smokers among the students of American colleges, recalls some facts discovered by Bertillon in 1855. He found on inquiry made by him concerning the pupils of the Polytechnic School of Paris that 108 of the pupils smoked and 52 did not smoke. He then arranged the 160 pupils into eight divisions, according to the places they held in examination, 20 in each rank, and found that of the 20 who stood highest 6 were smokers and 14 non-smokers. Of the next 20, 10 were smokers and 10 non-smokers; of the next 20, 11 smoked and 9 did not smoke; thus showing how much higher the non-smokers stood intellectually than the habitual smokers. He also found that the mean rank of the smoker, as compared with that of the non-smoker, deteriorated from their entering to their leaving the school. As a result of Bertillon's the minister of public instruction of France issued a circular addressed to the director of schools and colleges, forbidding the use of tobacco and cigars to students.—*Medical Record*.

THE Albany : Medical : Annals

REPRESENTING THE

Alumni Association of the Albany Medical College.

HOWARD VAN RENSSELAER, PH. B., M. D., EDITOR.

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NO. II.

ANNOTATIONS.

The Second Series of the Index Catalogue.—The first volume of the second series of the Index catalogue of the Library of the Surgeon-General's Office, United States Army, has recently been issued. It takes the vocabulary from A to Azzurri. It opens with a reprint of the first addition to the alphabetical list of abbreviations of titles of medical periodicals, from volume xvi of the first series. The plan and general appearance of the volume are identical with those of its predecessors, but we miss the familiar official letter from Dr. Billings, and there is nothing to show who was charged with the preparation of the volume. It is to be hoped that the issues of these volumes will be made perpetual. Their value can not be overrated.—*N. Y. Medical Journal*.

Gesture as Diagnostic.—Gesture has long been considered of diagnostic value, and Dr. Ricard points out peculiar phenomena in connection with the indication by patients of the location of pain. If a patient is asked to locate his pain he does so by the movement of one or both of his hands. The gesture, however, in reality not only indicates its seat, but describes its character and distribution. This is an all important point. If the pain is widely distributed over the whole chest the patient locates it with a circular rubbing motion of the palm of the hand, indicating the diffuse soreness. On the other hand, the pain of a serious inflammation is described by first drawing the hand away from the body, and then, with the fingers close together or with

the index finger extended and the other flexed, cautiously approaching the seat of the inflammation. In appendicitis the patient refrains from touching the skin, indicating the location of the pain by simply holding the palm of the hand over the diseased areas. To indicate violent non-inflammatory abdominal pains the patient will slap himself vigorously across the abdomen. In the hip joint disease the pain will be referred to a point inside the knee. With terrific diffused pain in the leg, not due to an inflammation, the patients grasps the leg firmly. If it is a darting or lacerating pain he will indicate it with one finger. Pain caused by the descent of renal calculi and gall stones is suggested by the following of their course with the top of the thumb or index finger. A severe syphilitic headache will be indicated by hammering with the tips of the fingers near the seat of the pain. In joint pains the patient approaches the seat of trouble very cautiously, with the hand spread flat. The degenerative pain of locomotor ataxia is described by grasping the affected area firmly, indicating a band like pain. Or, if the pain is sharp and lightning-like in the leg, the pain gesture is perfectly descriptive of an energetic downward motion, at the same time twisting the hand as though manipulating a corkscrew. —*The Medical and Surgical Reporter.*

Changes in Urine from Medicine.—Oleoresins and balsams (copaiba, sandal oil, turpentine and its derivatives) taken as medicines often give a yellowish zone at the circle of contact between the nitric acid and the urine in the cold test for albumin. From a ring of albumin, however, this cloud can be easily distinguished by its solubility in alcohol. Concerning the test for glucose, many organic medicants (chloral, chloroform, turpentine, glycerin, sacilic acid, etc.) give rise to urinary ingredients which reduce copper solutions to a less or greater degree on prolonged boiling. The phenylhydrazin hydrochloric test will differentiate all these reagents from detrose. Sulphur (or albumin which contains it) gives a black precipitate with Boettger's bismuth test for glucose, and hence must be excluded as a factor if this method be used.—*Editor Denver Med. Times.*

The Consumption of Alcohol.—Frenchmen consume more alcohol than other Europeans, according to figures put before the Basil Congress for Alcoholism. In the computation the amount of alcohol in light wines and beer is included. The average annual consumption of alcohol per head of population is 13 quarts in France, 10 in Switzerland, Belgium and Italy, 9 in Germany and England, 4 in Sweden, 3 in Norway, and 2 in Canada.—*Medical News.*

The Unwritten Law.—Commenting upon the proposal to draw up a code of ethics of the British Medical Association, the *Lancet* says that “professional ethics cannot be put into written form. They are essentially unwritten. To write them would be to spoil them. They are like the aroma of some flowers—an aroma which when concentrated becomes offensive.”—*Medical Record*.

Typhoid Fever at Albany, N. Y.—The bulletin of the North Carolina Board of Health for August gives a resume of recent studies on the subject, “Does Good Water Pay?” The writer takes for an object lesson the state of affairs that exist at Albany, N. Y., a city whose water supply is taken from the contaminated Hudson river. He quotes the statements of Professor Mason of the neighboring city, Troy, to show the economy that might be exercised by officials in curtailing the expense account inevitably incident by that the water-borne zymotic disease, typhoid fever. What is the tax levied annually by that fever upon a city of 100,000, for instance Albany, N. Y. From statistics given in the five last annual reports of the State Board of Health, the deaths due to typhoid fever in Albany average about 75 for the year. Rating the money value of each life at \$2,000, this death rate would mean an annual pecuniary loss to the city of \$150,000. Funeral expenses are variously estimated at from \$20 to \$30. Should we accept the intermediate value of \$25, this would cause \$1,875 to be added to the above sum, thus raising the total direct loss through death to \$151,875. But typhoid fever does not always kill, its mortality rate is commonly quoted at about 10 per cent. For the present purposes should we assume nine recoveries for each death from the disease, and place forty-three days as the period of convalescence (the average of 500 cases at the Pennsylvania hospital) we should have a term of 29,025 days as representing the time lost per year, by 675 persons who have the fever and recover. Thus an annual loss of over seventy-nine years has to be borne by the city's capital of productive labor. This great amount of enforced idleness, when translated into money value, should very properly be added to the death loss above estimated. Fixing the rate of wages at one dollar per individual per day, a very low figure, considering that the bulk of typhoid patients are in the very prime of life, there is a loss of \$43 for wages for each recovery, or a total yearly loss for the city from this item of \$29,025. The cost of nursing and doctors' bills equal at least \$25 per case, which is a very low estimate, thus adding the further amount of \$16,875 to the gross sum. Expressed in a tabular form, this yearly tax imposed by typhoid fever in Albany is given, and upon a most conservative estimate, it is practically \$200,000, which is \$2 a year for each man,

woman and child in the city, or a yearly tax of \$10 for every family of five persons: 75 deaths at \$2,000 each, \$150,000; 75 funerals at \$25 each, \$1,875; wages of 675 convalescents during 43 days, at \$1 per day, \$29,035; nursing and doctors' bills for 674 convalescents, at \$25 each case, \$16,875; total levied annually by typhoid fever upon the city of Albany, \$197,775. It can readily be seen that the public works that could eliminate a reasonable fraction of this great tax would pay for themselves in the course of a few years, even though they were originally expensive. Finally, it is right to inquire what fraction of the present typhoid loss it would be reasonable to hope to save if pure water should be served in the city in place of its present polluted supply. To answer this question recourse must be had to statistics obtained from other cities, covering periods before and after better water systems have been introduced. Such data have been already given for a number of cities and communities, and it only remains to anticipate what will be later said of Munich, and state that improved water and sewerage have reduced the annual typhoid mortality from an average of 25.4 per 100,000 to 2.7. Surely pure water pays in a city with such a record, and likewise it would pay in the newer growing cities on this side of the Atlantic. Americans insist on being supplied with much more per capita than is usually furnished for Europe, but they are singularly indifferent as to its quality. It would be reform of great moment if they could be induced to curtail the present enormous waste of public water, such as that of Buffalo, for instance, which is stated to be 70 per cent of the entire pumpage, and to spend the money thus permitted to leak away in a vigorous effort to improve the quality of the water. No such lowering of the typhoid death rate as occurred in Munich, San Remo and sundry other places could be looked for, perhaps, but a large percentage of the present rate could be cut off, and we think, from a consideration of the above figures, that such a reduction would pay. No weight should be attached to the argument so often advanced by the individual householder that he and his family have used the water without evil results for the past fifty years. A single family is too small a collection of units upon which to base any estimate touching the question at issue. Placing the typhoid death rate of Albany, as above, at 75 annually, it would call for one death in a family of five persons every 261 years, a period much beyond the limit of ordinary family record.—*The Journal of the American Medical Association*.

Smegma Bacilli and Tubercle Bacilli.—Mendelsohn (Deutsche Med. Woch., 1896, No. 17) reports a case in which the patient's urine contained much pus and granular detritus. The urine from the right

ureter was clear, while the cystoscope demonstrated that the pus and detritus escaped from the left ureter. Tubercle bacilli were found in the urine. Nevertheless, the extipation revealed a stone in the diseased kidney and no evidence of tuberculosis.

Von Leyden (Fortschr. der Med., May 1, 1896) calls attention to the frequency with which the bacillus tuberculosis has been confused with the smegma bacillus, especially as the two have certain morphological resemblance and their staining reactions are not dissimilar. They are differentiated as follows: 1. Smegma bacilli, stained by aniline dyes, lose their stain on two-minute treatment with acidulated alcohol, while tubercle bacilli do not thus destain. 2. Smegma lose their stain under Gram's stain, while tubercle bacilli retain aniline-fuchsin staining. 3. A cover-glass preparation of tubercle bacilli, carried through the flames ten times and stained with Ziehl solution, presents the bacillus in a somewhat granular form as composed of a succession of spherules, the smegma bacillus remains a solid rod under the same treatment.

Leyden records several mistakes made before the identification of the smegma bacillus. König publishes a case of enlarged kidney, with tubercle bacilli (so-called) in the urine, which were, however, smegma bacilli, and the renal tumor was sarcoma. Senator has seen many cases of alleged tubercular cystitis recover, which he could explain only on the assumption that smegma bacilli contaminated the urine of a vulgar cystitis. This author has written on the differentiation between the two varieties of bacilli in his contribution to Nothnagel's System of Special Pathology and Therapy, now issuing from the German press.

Fraenkel avoided many mistakes by carefully cleansing the genitalia and then catheterizing. He has used Ehrlich's stain (gentian violet) for tubercle bacilli, which method, on destaining with nitric acid, leaves smegma micro-organisms without stain. The "caterpillar"-like arrangement of the tubercle bacilli is not observed in the other genus.—*Medicine*.

New Uses for Bacteria — The Inoculation of the Farm Land for the Cultivation of Leguminous Plants.—Bacteriology has made many inroads into the domain of our domestic and agricultural life, to say nothing of its innovations in hygiene and therapeutics, and the future promises to reveal much that is now undreamt of. The inoculation of inorganic masses, like farm land, seems very singular at first thought, but as will be seen from the following, the use of the term is quite justifiable.

A comparatively young branch on the tree of botanical investigation is the theory of symbiosis (life together) represented, for example, in the interunion of fungi and algæ to form the lichens. Many a tree (the beech among others) and shrub owe their abundant nourishment to a symbiosis with a specific hyphen-tissue—among others, the members of the large family of Papilionacæ. The roots produce little tubers in which vegetate certain bacteria whose mission it is, as Hellriegel discovered it 1886, to store up for the plant and offer it to the latter in assimilable form, the nitrogen of the air.

This valuable property of the nitrogen-gatherers, Papilionacæ, was first utilized in a practical manner by Schultz of Lupitz, by cultivating on his comparatively sterile estate, first, nitrogen accumulators, and then on the same soil nitrogen-feeders (species of grain, etc.); but experience has demonstrated that clover, vetch, beans, lupines and other papilionaceous plants will not thrive in every soil, and this fact suggested the thought that the cause must be sought in the soil's poverty of nitrogen-gathering bacteria inasmuch as the employment of fertilizers containing nitrogen combinations did not answer the purpose.

Since 1890 the experimental station at Tharandt, guided by the foregoing theory, has been working along the line of obtaining pure cultures of the various root-bacteria peculiar to the various species of Leguminosæ. The director of this institution, Dr. Nobbe, has inoculated the soil in various parts of the German empire. First he applied externally the proper species of bacteria to the leguminous seeds; second, prior to sowing, he incorporated earth only slightly inoculated in the soil under experiment. In both cases the results were such that this inoculating process promises to come into great vogue in agriculture, and Dr. Nobbe expresses his willingness to state the proper methods of culture and the precautions to be observed. Manufacturers and dealers in fertilizers will soon have to take this natural nitrogenous fertilization into account.

To determine whether inoculation of the seed or earth is the more advantageous, the experimental cultivation of vetch, yellow lupine and clover is recommended.—*Pharmaceutische Centralhalle*.

Longevity of Human Life Increasing.—A German statistician has calculated that of every 1,000 persons 100 reach the age of 75, 38 the age of 85, and only 2 reach 95. In the seventeenth century the average duration of life was only 13 years; in the eighteenth, 20; in this century, 36.—*Medical News*.

Milk Inspection in New York.—Milk Inspector Dockery of New York city has just made his annual report, which shows that in nine months he has inspected not less than 3,700 cows and condemned 7,300 gallons of milk. He is the first man in the office to enforce the regulations, and the result has been a marked decrease in infant mortality.—*Medical News*.

Against the Sale of Quack Remedies.—A new law against “unfair competition in trade,” which has come recently into force in Germany, may, it is hoped, be taken advantage of to restrict the sale of nostrums. It is aimed against false descriptions and other forms of swindling by advertisements. Not only the advertizer, but the newspaper publishing the advertisement, may be prosecuted.—*Medical Record*.

A New Test for Albumen.—Reagents for the detection of albumen in the urine must be colorless and must reveal the presence of albumen even when the amount is too small for quantitative estimation. Dr. Jolles has published a new and delicate test, consisting of:

Chloride of Mercury,	-	-	10 grammes
Succinic Acid,	-	-	20 “
Common Salt,	-	-	10 “
Distilled Water,	-	-	500 “

In the process of testing, 4 c. c. of the filtered urine are mixed with 1 c. c. of acetic acid, and 4 c. c. of the above reagent are added with shaking. In a second glass similar quantities of urine and acetic acid are mixed with pure water instead of with the reagent. This test yields a cloudiness of albumen in cases where the ordinary tests fail to give any result at all.—*The Lancet*.

A Halyon Time for Doctors.—Physician of the new school (after turning X rays on the patient)—“Your case is a somewhat complicated one. There is a slight trouble with your left lung, and I observe enlargement of the liver and fatty degeneration of the heart. Kindly hand me that \$2.54 in your right-hand trousers pocket and I will prescribe for you.”—*The Medical and Surgical Reporter*.

READING NOTICES.

Streptococcus Antitoxin (*Marmorek*).—For Erysipelas, Puerperal Fever, Septicemia, Scarlet Fever, Broncho-Pneumonia, and all other conditions caused by streptococcic infection is attracting a good deal of attention from the medical profession throughout the country. This preparation, together with all the Antitoxins made by the

Pasteur Vaccine Co. (*Ltd.*) of Chicago, can be supplied by Theodore Metcalf Co., 39 Tremont Street, Boston, Mass.

Papine, Bromidia and Iodia.—P. N. de Duboeay, M. D., F. R. C. S., of Tallulah Falls, Rabun Co., Ga., Sept. 22d, 1896, writes:

“I have used Papine, Bromidia and Iodia extensively in my practice and expect to continue doing so, as these preparations undoubtedly are of great value. I have found your Iodia specially useful in cases of menstrual disorder generally, and as an alterative. Papine must of necessity come greatly into vogue with the general practitioner relieving pain as it does without unpleasant after effects. It was of great value to me in treating the pain in a female suffering with (incurable) cancer.

The Purity of Cocaine.—To every physician, surgeon and specialist who employs Cocaine hydrochlorate, the absolute purity of the product used is a matter of paramount importance. Cocaine is used in the most delicate operations; it is applied externally, hypodermatically and internally. and in whatever manner used it may cause suffering and grave results if the product is impure.

To make Cocaine absolutely pure, it is necessary to eliminate allied alkaloids and all inorganic substances, and this requires the most perfect technical methods and scrupulous care in the manufacture.

Boehringer & Soehne, as leading makers of Cocaine and the first to improve the process and furnish a chemically pure product, offer the assurance that all Cocaine supplied in original vials with the “B. & S.” label is *absolutely pure*, of uniform highest *standard* of quality and *reliable*.

B. & S. Cocaine hydrochlorate is supplied in chemically pure, anhydrous, well-defined, perfectly white crystals; it meets the requirements of the United States Pharmacopeia, as well as all other standard tests.

For ready determination of presence or absence of dangerous allied alkaloids or impurities in Cocaine, we quote these official tests:

TEST I.—Dissolve 0.1 gramme cocaine hydrochlorate in 5 ccm. water (making a 2 per cent. solution) in a clean, glass-stoppered vial, adding 3 drops diluted sulphuric acid; then add 1 drop of a 1 per cent. solution potassium permanganate, which produces a pink or violet tint. This tint will not visibly decrease within half an hour if the cocaine is free from *cinnamyl-cocaine* and other dangerous impurities.

Contamination with *isatropyl-cocaine* (a violent cardiac poison, which is stable towards the permanganate test) and other basic impurities may be detected by MacLagan’s ammonia test, viz:

TEST II.—Dissolve 0.1 gramme cocaine hydrochlorate in 87 ccm. water, and then add 3 drops of ammonia; for a few moments the solution will remain clear, but a rapid stirring with a glass rod will cause a prompt crystalline precipitation of free cocaine. If isatropyl-cocaine is present a milky turbidity will immediately ensue on addition of the ammonia; if other impurities are present they will prevent the crystallization of the cocaine.

B. & S. Cocaine will stand both tests—as well as all other official tests—perfectly; it is a chemically pure Cocaine, of the highest possible standard of quality.

The following authorities have testified to the absolute purity and superiority of B. & S. Cocaine Hydrochlorate:

Dr. CARL KOLLER, of New York. (Formerly of Vienna, the first to apply Cocaine in medicine).

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Professor STOERK, of Vienna.

Professor STELLWAG, of Vienna.

Professor Dr. JURASZ, of Heidelberg.

Professor Dr. E. FISCHER, of Strassburg.

Professor Dr. RIEDINGER, of Wurzburg.

Professor Dr. G. DRAGENDORF, of Dorpat.

Dr. K. EMELE, of Graz.

Dr. LEOPOLD LANDAU, of Berlin.

Dr. HERRNHEISER, of Prague.

Professor CASIMIRO MANASSEI. (Pres. of the Italian Section of the International Medical Congress of Paris.)

Dr. G. B. DANTONE, of Rome.

Dr. AUG. RITTER VON REUSS. (Professor of Ophtalmology, Royal and Imperial University, Vienna.)

Professor Dr. SCHÆBE, of Prague.

Professor Dr. U. MOSSO, of Turin.

Professor M. A. TICHOMIROFF, of Moscow, etc.

B. & S. Cocaine is sold by all wholesale druggists in the United States, and it can be promptly obtained from local pharmacists and dealers in every section of this country, in original 5, 10 and 15 grain vials and in 1-8, 1-4, 1-2 and 1 ounce bottles.



BENDER HYGIENIC LABORATORY.

THE Albany : Medical : Annals

VOL. XVII.—NO. 12. DECEMBER, 1896.

\$1.00 A YEAR.

The Dedication of the Bender Hygienic Laboratory.

The Bender Hygienic Laboratory was dedicated on Tuesday, October twenty-seventh, 1896.

The building itself, a picture of which is contained in this number, was presented by Matthew W. Bender, Esq.

The Park Commissioners of the City of Albany allowed the building to be erected on land devoted to public usage; and the faculty of the Albany Medical College, by a unanimous vote, contributed their salaries, as teachers in the Medical College, for the coming year, for the purchase of the entire scientific apparatus.

The equipped institution thus represents: The generosity of a public spirited citizen, the wise foresight of the municipality, and the self denial of the physicians connected with the Albany Medical College.

That the enterprise thus worthily founded may be a model and example to other institutions throughout the land, and be a stimulous and incentive to generous gifts of patriotic minds, and that it may continually contribute to the advancement and dissemination of scientific medical knowledge, and to the prevention and spread of disease and death, is the earnest hope of the entire community.

The order of exercises, together with the speeches made on the occasion of the dedication of the building is as follows:

Prayer by Rev. J. Livingston Reese, D. D.; History of the building by Geo. E. Gorham, M. D.; Formal presentation of the building to the board of Trustees by Harry H. Bender; Reception of the building on behalf of the Board of Trustees by A. Vander Veer, M. D., Regent of the University of the State of New York; Address by Prof. B. Jacobi, M. D., of New York; Benediction by Rev. Free-born B. Jewett, Jr.; Inspection of the building.

History of the Building, by Geo. E. Gorham, M. D.

*Mr. Chairman and Gentlemen :—*Twelve months ago the first foundation stone of the Bender Hygienic Laboratory was laid; less than twelve weeks ago the sound of the hammer and the swing of the brush were yet within these walls; therefore, the history of the building is a brief one. Brief though it be, it gives me pleasure to relate it.

Pleasure, because to erect such a building, for such a purpose, is an honor to our city, a credit to our state. Pleasure, because to our State Normal College, the Albany Medical College, the Albany Law School, and our other well known institutions of learning, we add to-day the Bender Hygienic Laboratory, and institute here a course of instruction and scientific research in pathology, bacteriology and the allied medical studies, emphasizing again the fact that as a progressive educational centre Albany ranks with the first in this country. It also gives me pleasure to state that this, the latest accession to our educational institutions, comes to Albany through the generous gift of her esteemed citizen, my friend and neighbor, Mr. Matthew W. Bender.

About two years ago, knowing something of Mr. Bender's unostentatious contributions to charities, I mentioned to him Albany's need for better hospitals; later, at the suggestion of Dr. Vander Veer, I presented for his consideration the idea of building a Laboratory for pathological and bacteriological work. Mr. Bender promptly offered to give \$20,000 to erect such a building upon the condition that a suitable site be provided him.

On the evening of June 27th, 1895, Dr. Albert Vander Veer, Dr. Henry Hun, Mr. Robert Scherer and George E. Gorham, met with Mr. Bender and for the purpose of carrying out his wishes, organized the Board of Trustees of the Bender Hygienic Laboratory. The Board immediately applied to the Park Commissioners, and through their generous action the desirable site and grounds now occupied by the building on Lake avenue were obtained. Messrs. Fuller and Wheeler were employed to prepare plans for the building, and, at the next meeting of the Board, July 12th, the plans were accepted. August 5th, 1895, bids for the work were examined by the Board and contracts awarded to the following Albany contractors: Masonry, Stephen A. Carr; carpenter work, Morris L. Rider; painting and glazing, David R. Stewart; steamfitting, P. J. Sweeney; plumbing, Ridgeway & Russ; roofing, James Ackroyd; Mosaic tiling, the Schilling Co.; corner stone, Flagler & Chapman; gas fixtures, Van Heusen Charles Co.; seating, W. A. Choate Co.; elevator, Sedgewick Machine Co., of New York City.

Under the supervision of the contractors the work has gone steadily forward to the state of completion in which you see the building to-day. The Mosaic tiling, the seating, elevator, and a few other extras not included in the first contract, have been added by Mr. Bender at a cost of one thousand five hundred dollars in addition to the twenty thousand originally donated.

Dr: Geo. Blumer, late of Johns Hopkins University, is director of the Laboratory, and under his directions the class rooms, amphitheatre, etc., have been fully equipped with necessary apparatus, Eighty-five microscopes, tables, lockers, thermostats, hot air and steam sterilizers, freezing apparatus, microtomes, etc., have been placed in the different departments. This generous outlay, together with the salary of the director is furnished by that tireless corps of public spirited and unselfish workers, the faculty of the Albany Medical College.

**Formal Presentation of the Building to the Board of Trustees by
Harry H. Bender in the Name of the Donor, Mr. Matthew
H. Bender.**

In attempting to perform the delicate but pleasant task which devolves upon me at this time, I am deeply impressed with the disparity between the importance of the occasion and my own small measure of ability to do it justice. I cannot hope to put in adequate language the sense of gratification and personal compliment I feel in being thus chosen the humble instrument to formally symbolize, in this public manner, the consummation of a project the practical realization of which began on the 31st day of October, 1895, when I witnessed with parental pride the laying of the corner-stone of this edifice by the boyish hands of my son, Kenneth Everts Bender—a project which I believe is fraught with the possibilities of wonderful achievement in the science of medicine and untold blessings to mankind. I can only assure you of my enthusiastic sympathy with the philanthropic and humanitarian motives which actuated the donor in his conception of this gift, the singleness of purpose with which he has furthered its development, and the broad and liberal spirit of professional enterprise which has been his inspiration and encouragement at all stages of the undertaking, and which now prompts you, gentlemen, to receive from him the responsibilities and opportunities accompanying its bestowal which only the future can unfold.

I deem it one of the greatest privileges of my life to have been connected in an executive capacity with this work. While I have at

all times felt the weight of my responsibilities, and have not been free from care and anxiety as it progressed, yet I am happy to say that on all occasions I have been animated by the spirit of hearty and cordial co-operation which has been uniformly accorded me by the medical profession into whose capable hands I now commit the fruit of our united labor.

It is not, perhaps, fitting that I should dwell upon the nobility of the mind, the virtues of the heart, the generosity of the hand, which called our efforts into being, and ever stood back of and upholding us all, never failing in any crisis or emergency to furnish that moral and material support without which our exertions would have been unavailing. But I trust I am not debarred by family ties from telling you how proud I feel to-night that the modest and unassuming gentleman who has been and is the heart and soul of this undertaking—to whom is due the gratitude not only of this corporation and the medical profession, not only of the thousands of students of the Albany Medical College who will receive substantial aid here, not only of our day and generation, but of the unnumbered posterity which in after years shall rise up and call him blessed—bears the name of Bender. I cannot leave wholly to other lips the praise that is due to him who by his works has proved himself to be humanity's benefactor, and who has so signally honored me with his confidence in the carrying out of his high-minded charity.

**Reception of the Building on behalf of the Board of Trustees, by
A. Vander Veer, M. D., Regent of the University of the State
of New York.**

My dear Mr. Bender:—In accepting the noble gift you have this day donated to science, in behalf of the Board of Trustees of the Bender Hygienic Laboratory, and of the faculty of the Albany Medical College, I desire to express to you our earnest thanks and gratitude.

The conception and object has been so well presented by Dr. Gorham, and by your nephew, Mr. Harry H. Bender, that I can add but little in commemoration of this great event.

Within a few days of one year ago we stood upon the foundation structure of this building, and with proper ceremonies assisted in laying the corner stone. It was my privilege at that time to address you with such remarks as the occasion called for, and in a few brief sentences I alluded to the possibilities that the building of this Laboratory might bring in the "lengthening of human life and the alleviation of human suffering."

Had I the power of expression, and did time permit, I would be glad to dilate upon these points, and express to you more fully the thoughts of respect and admiration that exists in the minds of the Trustees and those who are hereafter to be associated with the administration of this building towards yourself; for the nobleness of purpose, for the grandeur of the act that is now consummated, in giving so elegant a structure for future investigation of the causes and study of diseased conditions of the human system. We all rejoice that your life has been spared, and that we have you with us to-night, that you may witness the dedication of your own good work.

A wise man towards the close of his life once said, "All that I have spent upon myself is gone forever; all that I have saved I must soon leave to others, but whether it shall be a blessing to them I know not."

To this may be added that, in the closing period of your life, you may justly say that "the work I have here done will be constantly witnessed and enjoyed with a wonderfully cumulative quality."

What a blessed thing to have been able to accomplish so much, and to be permitted to witness somewhat the good results that are to follow!

Who can deny but that with the director and his assistants of this Bender Hygienic Laboratory, we may not yet see larger investigations in tuberculosis that is to result in the saving of life; or that in the study of septic peritonitis we are yet to know something more as to the deadly effect of the ptomaines and conditions that result so rapidly in death; or that we may not learn something that will tell us of the true nature of cancer and the possibilities of its treatment; or that in the continued investigation of water supplies, and of the isolation of the bacillus of typhoid fever, we are not to learn something more saving in the treatment of this disease; that we are not to profit by investigation as to the contagious and infectious diseases, as scarlet fever, diphtheria, etc., the true nature of the so-called milk disease, the better treatment of such acute attacks or conditions as present in poisonous ice cream, and many forms of diseased food, and something more to be learned as regards the possibilities and uses of the antitoxines? Who can deny that it is not among the possibilities that in the future here may be discovered and demonstrated the antitoxin that is to be used against the venom of all snake bites?

Within your memory you have witnessed epidemics that have visited Albany and claimed its many victims in the grasp of death; you have seen the effort made to build a high fence to shut out the dreaded cholera, and it ought now, in the erection of this grand struc-

ture, to be a comfort to you to know that in it may be established a bulwark of strength to keep at bay the most virulent epidemic.

You, and all of us know this to be true, that in the investigations made by bacteriologists, enabled by such generosity as yours to conduct earnest research, we have learned that cholera is a distinct germ, and that this very bacteriological study has established a line of treatment so beneficial that to-day, among intelligent and well educated people, there is little in the disease to be feared.

Consider for one moment some of the epidemics that cause so much anxiety among our farmers in certain sections, i. e., hog cholera, a disease of such fatal character, or another called Texas fever among cattle, or chicken cholera, how thoroughly well these conditions have been followed out, brought to their true origin in a microbe, that tells in itself the line of protection and necessary treatment. These are, of the list, a mere reference, a foretaste of the many possibilities of the work that may be done here in the future.

In assuming the responsibility that rests upon us as Trustees, in taking charge of the building, we appreciate the generous gift made by you in the cause of science, and that you have completed here an edifice that is suited in every way better than some far more pretentious and expensive for the work at hand; that you have done more than you really promised at first in its construction. But we also realize that we are greatly indebted to the Faculty of the Albany Medical College for the rich and modern equipment of apparatus, that is up to date in every respect, aiding so clearly to complete the plant as a whole. We also realize that for the maintenance of the work it is intended shall be done here, the Faculty of the College has assumed much, but we trust that the same public generous spirit that stimulated you in fulfilling your promise may, through new, earnest friends, bring us an endowment, or in some manner aid in continuing the work so well begun.

To you, Mr. Bender, I am sure I convey the feelings of the Board of Trustees in rendering you our earnest gratitude, and in expressing in behalf of the Faculty of the Albany Medical College, its students, and members of the profession in this city and surrounding country, the wish that God may lengthen your years, and that your declining days may be peaceful and serene.

It is not my intention to dwell further upon the possibilities or the good that is to come from the work inaugurated here.

We have with us to-night one who leads in the noble path of science, one whose reputation is not alone of this continent, but the entire world. It may be said of him that he has done his work so well that it reaches to the North, South, East and West,—one whose repu-

tation for professional work has few equals—one whose name is known by thousands, and in thousands of the homes of his adopted country.

Therefore, I can say with all candor that it gives me great joy and thankfulness to be able to introduce to you, as the orator of the evening, Professor A. Jacobi, of New York City.

Address by A. Jacobi, M. D., of New York.

The earnest spirit exhibited in the arrangement of this celebration, the concourse of students, the participation of medical practitioners of this city and from beyond the boundary lines of Albany, the gathering of gentlemen not directly connected with our profession, the presence of a stranger upon whom you have conferred the honor of an invitation to address you, and the interest shown in your achievement both by the public and the press—all this seems to demonstrate that this occasion is felt by all to be one of more than temporary or local importance. This is as it should be, for of all the institutions of learning and research none can be more worthy of the sympathy of all classes than a laboratory of hygiene.

Hygiene is that part of medical science and art which treats of the causes and prevention of disease. We can not conceive of a subject of vaster importance and more incompatible with ignorance. It ought to be understood by every man to whom is entrusted the care of the individual or of the community, for it comprehends, as you will understand if you will but run your eyes over the index of any text-book on that subject, a great many vital topics. To it belong the normal and abnormal conditions of air, water, foods, and soil; the removal of sewage, the construction and sanitation of dwellings, hospitals, schools, manufactories, camps, arsenals and prisons; and the subject of baths and bathing, of clothing and exercise. The theory of disease germs and of contagion and infection, with the history of epidemic diseases and the disposal of the dead, prevention and treatment by antiseptics, disinfectants and deodorizers, and protection by quarantine, and finally, vital statistics form intrinsic constituents of hygiene.

You have noticed that the themes I enumerated are, so to speak, no mere primary elements of medical science or art. Indeed, they require the application of a number of branches which must be taught and learned before the difficult matter of hygiene can be fully grasped. It is mainly physics, chemistry, physiology, pathology and bacteriology which form the foundation of the structure, and ought to be thoroughly assimilated by the student's mind before he may expect to master

hygiene. It is, therefore, impossible to believe that the undergraduate will, in the second or third year of his medical curriculum, succeed in acquiring a knowledge of it any more than he can expect to become a diagnostician without anatomy and physiology, and without patients. The addition of a fourth year to the course of medical study, such as your college has established, is therefore indispensable. To it mostly belongs the instruction in hygiene which, based as it is upon previous studies extending over three years, must be twofold.

Didactic lectures and the study of books will convey much information, but without practical laboratory work, neither teacher nor student will succeed any better than the chemist without personal experimentation, the anatomist without dissecting, or the swimmer without water. Now, the significance of hygiene for the physician, the layman and the community at large is such as to preclude the possibility of a college with a two or three years course being able to supply a modern public with modern physicians. The profession has waked up to this knowledge some time ago; indeed, it has been the profession that was the principal agitator in behalf of progress. Your city of Albany has been a lively battlefield in the war of evolution. Those under whose leadership we have been struggling for the improvement of medical instruction and the extension of legal requirements these two dozen years will admit that the profession of the empire state had now and then to overcome serious obstacles coming even from some of the colleges. It is both with gratification and gratitude, however, that I remember the active and incessant aid lent to the cause of progress by the Albany Medical College. To-day both the profession and the colleges appear to work for the same ends, namely, the better preparation of matriculants, more years of instruction, longer courses, more branches and more teachers, every one of whom should be a thorough specialist—not necessarily in practice, but in the branch he means to teach—and besides: practical work in laboratories.

These are demands not always made either in America or Europe. The briefest possible retrospect of the condition of medical knowledge and practice, and of teaching methods, and a comparison of periods not so very remote indeed should as well emancipate us from desponding pessimism as justify some optimistic hope for the future. Of our present status I do not speak, for to intellectual enterprise there is no greater drawback than self-sufficiency and the beatitude of self-congratulation. No medical period can ever afford to boast of its own perfection.

Fifty years before I started to study medicine, say about 1800, medical science and art furnished many illustrious names. There were

Hunter, Haller, Bichat, Peter Frank. But teaching and practicing were comparatively on a low level. Most medical schools or medical faculties of universities were limited in anatomical material, practical instruction or clinical teaching. Often the same person would teach botany, obstetrics and theory and practice, or anatomy and *materia medica*. Aye, now and then there was one who would write books on philology and on medicine; still there was an advance, in spite of the mysticism in which the medicine of Germany was, it seemed, hopelessly immersed; for the empirical tendency and cool observation of the Anglo Saxons never wavered, and the French kept the flag of scientific anatomy, physiology and nosology unfurled in the first half of the century.

Fifty years ago when I was considerably younger than to-day, and began the study of medicine on which I continue to be engaged at the present time, Virchow had just commenced his war against ontology, and laid the foundation of cellular pathology. Still, the differential diagnosis of what has been called Bright's disease had begun to be elaborated but twenty years previously. The stethoscope was not twenty years old, and my old professor at Bonn, Friedrich Nasse, then three score and ten years old, was one of the few who appreciated and enthusiastically taught on German soil this French innovation. In Goettingen I had an illustrious teacher who was at the same time professor of anatomy and dissected with us, and of operative surgery and director of the surgical clinic. In all Germany outside of Vienna, which at that time was part of Germany, there were but two places where pathological anatomy and histology were taught, and but two men who gave such instruction, namely, Virchow in Würzburg, and Frerichs in Goettingen. That is why I travelled four hundred miles to the latter place. In a New York institution I was, some thirty or thirty-five years ago, connected with a surgical gentleman of knowledge, enterprise, skill and fame, whose proudest possession was a large, splendid, gorgeous, velvet gown, which covered him all over to his feet, and made a tremendous impression on the spectators while he was operating on the dead or the living; he attended to both, sometimes in the same hour and on the same table in the amphitheatre. Now and then he would perform the same operation, first on the cadaver and immediately afterward on a patient. It was not very hygienic, but at that time it was strictly legitimate. A hospital and a dissecting room were under the same roof. That was but little more than thirty years ago, and few of us knew or taught better. A short twenty-five years ago we had in connection with wounds no higher ambition than to see pus. If there was none we might have, and too often had, erysipelas or gangrene. Pus was always looked for and welcomed if it

was but "bonum et laudabile". When I was a student there was no laboratory anywhere but the chemical. It was at that time that Pettenkofer began in private his influential studies on topics connected with hygiene, but it took decades before he succeeded, in 1878, in obtaining an official laboratory. Still, from him and his time date the appreciation of the theoretical and practical importance of hygiene as a science. I may state the gradual effects of his personal and local efforts right here. It was from that period that the sanitation of Munich became possible. It resulted in the extermination of typhoid fever which had decimated both the home population and the strangers. It spread health and vigor over old and young, while embarrassing the mourning goods stores and the undertakers.

In recalling these historical facts and personal reminiscences, let me not forget, however, that within that time great achievements were accomplished even without the modern methods of work and study. Although there were no laboratories, and no high-power microscopes, no Abbe condensers and no oil immersions, there was what no great metropolitan teacher nor obscure country practitioner should be without—educated brains, powers of observation and application, and common sense. Within that very time, a century ago, Jenner had introduced vaccination, and one-third of a century ago the United States improved hospital arrangements. It is our pride as a nation, and always should be, to remember that America has been foremost in accomplishing the greatest practical progress almost without any schooling. I can do no better for you than to copy, in order to make clear what I mean to say, literally from our great pathfinder and master, Rudolf Virchow. In his "Progress of Military Medicine," an oration delivered on August 2nd, 1874, he says: "The French army lost in the Crimean war 33% of its men, namely 95,615. Of this number 10,240 were killed on the battlefields, and about as many died of their wounds in the hospitals. More than 75,000 men died of infectious diseases. In the American civil war 97,000 died of their wounds and 194,000 perished of infectious and other diseases. What a vast amount of pain and misery! What an ocean of blood and tears, and besides what a number of errors, mistakes and prejudices! It is not necessary to now enumerate the long list of blunders and sins. They are so well known as to serve in the future as warning examples. Let me say here that it was not misfortune alone that showed where the cause of evil was and then provided aid. If the French learned little or nothing in the Crimea, and the Americans so much in their civil war as to create a new era in military medicine, the explanation is not to be sought for in the immensity of misfortune and misery undergone by the Americans, for they did not

suffer any more than the French did in the Crimea. The explanation is in the critical and thoroughly scientific spirit, the clear perception, the sound and practical common sense which penetrated gradually every part of the American military administration, and which with the astounding coöperation of the entire nation accomplished more humane results than any great war ever produced before. Whoever studies the copious publications of the medical staff of the American army must again and again be astonished at the vast experience collected in them. Absolute accuracy of details, the most painstaking statistics, acquaintance with all branches of medical learning, and a comprehensive style are united in them for the purpose of collecting and preserving in the interests of the present and future generations the new knowledge so dearly bought."

The practical results of the civil war were the pavilion system, the increase of air space, the isolation of contagious diseases, the improvement of heating and ventilation, and thereby a vast saving of lives. The lessons were not lost; were learned and adopted all over the globe, and made the American name honored and blessed all over the world. Understand, young men, for the present and the future, that this is the only practical and useful sort of interference with European nations which is worthy of the American people and consistent with the principles of our government.

While almost instinctively we succeeded in finding some way of escape from deadly diseases, the Europeans advanced slowly and surely to the evolvment of what first appeared theoretical science only, but proved of vast practical import. These two, as a rule, go hand in hand. It is true science that has its own reward in satisfying the mind, but I know of no instance in the history of mental development but demonstrates the fact that the most theoretical, the most abstruse intellectual result will always turn out to be serviceable to mankind. Of this there is no more beneficent instance than the methods by which the sources of disease have been fathomed. By the study and knowledge of their causes the greatest improvements have been made in the prevention and treatment of epidemic diseases. There was a time when they were unexplained in their suddenness and considered unavoidable. Niobe and her nine children slain by Apollo and Diana are always sad realities. There have been millions like them, though they alone live forever in marble and prove that the highest degree of æsthetic and artistic achievement may well accompany dense ignorance. That may occur in nations as it does in individuals. In heathen antiquity and Christian mediaevalism disease and death are deemed punishments. There is no way of combating them; mute submis-

sion only is demanded. Nothing is indicated but prayers, offerings of beast or man, and pilgrimages. There was another time when nothing bad could happen except through some evil influence. Somebody was at fault when a cow or a child died. There was witchcraft or the evil eye. When there was a general dying somebody must be killed for it—dissenting protestants by the hundreds, Jews by the ten thousands.

There was a later period when it was neither gods who sent their swift arrows nor Jews who poisoned the wells; when it was well known that epidemics would follow in the path of wars and thus depopulate the large cities; that they would spread from man to man and thus decimate the people. The latter belief was even exaggerated when it was found advisable to class syphilis also among those diseases which could be transmitted without physical contact, for nothing is more pleasing to human self-love than to escape, not so much guilt as the appearance of guilt. Thus it was felt that in the dissemination of contagious diseases there must be a something the nature of which was unknown or unknowable. The "genius epidemicus", the epidemic tendency, was the pass-word which allowed etiology to go unchallenged. By others, though they admitted not to know the nature of the contagion, the latter was believed to originate in the body, at least in some instances, spontaneously. Typhoid fever, tuberculosis, dysentery were thus explained. By many, spontaneous generation of the cause of the disease was assumed for the generality of cases; by others, for the first instances of the epidemic only, but no matter whether the real cause was hidden there were the facts of contagion and of awful mortality; and the clear head of the eighteenth century—Sydenham in England, Boerhaave in Holland, Van Swieten in Holland and Austria, Peter Frank in Italy and Austria—knew better than to cross their arms in such nihilistic contemplation, as reigned supreme through a protracted period of this very century of science and humanitarianism. Many of the measures established at present on solid knowledge and improved by experimental research were inaugurated by them. Their reasoning was as follows: Man is the carrier of contagion; therefore, when falling sick with a contagious disease he must be isolated. A contagium will not cling to everybody indiscriminately. Thus the amount of individual vulnerability appears to be larger or smaller, but no matter how various the degrees, there is *some* vulnerability probably in everybody. Therefore, try to diminish it by saturating the system with the poison when the epidemic is mildest. Thus they inoculated variola and risked a slight danger rather than allow men to die of a greater. And thirdly, no matter whether the nature of the contagion is clearly known, it is advisable to destroy or diminish its poison. As

early as the period of black death in the fourteenth century people would keep wood and tar fires burning in the streets. Was it the instinctive belief in the disinfectant action of heat, of tar, and of creasote?

Afterwards fumigations with vinegar, with chlorine, nitrous acid, were resorted to. Patients and utensils had to submit to disinfection as best they could, and goods or tools were either burned or temporarily buried.

The organic origin of disease (which was to be proven after manifold labors) was first suspected in antiquity when imagination gathered all the visible and alleged invisible insects under the sinister command of the supernatural patron, the devil. Amongst the Romans, Varro suggested the presence, like that of big insects, of invisible minute beings hovering over swamps which he thought might cause fevers. Paracelsus when speaking of the seed of diseases may have believed in a similar hypothesis. A clergyman, the Jesuit Anastasius Kircher, 1671, was the first, however, to claim contagion to be the result of organic influences, and Leuwenhoek being in possession of a better instrument made by himself, was the first to discover real bacteria.*

Progress, however, was slow. It took a century until O. F. Müller, 1786, was able to describe and draw some of them. The names given by him are still in use. Bory de St. Vincent in 1824, Ehrenberg in 1838, Dujardin in 1841, added a great deal to our knowledge. In my own time Perty, in 1852, discovered the changes which take place in bacteria when developed under varying circumstances, and in 1853 Ferdinand Cohn classified, rather pedantically, it is true, the whole number of microbes then known.

Kircher's theory of the organic origin of disease was adopted by Lancisi, Reaumur and Linné. Its firmest believers were Marcus Antonius Plenciz whose book of 1762, and Pringle whose researches on infectious diseases and disinfectants furnish the best presentation of the subject in the last century. Their views, as Ferdinand Hueppe aptly remarks, were, however, not generally held because it was not so much the *cause* of the disease as the disease itself that was considered to be a living parasite; for it is from that time that such names date as lupus and cancer, which have outlived their justifiable term of existence. Besides, positive knowledge based on descriptive observation was defective to such an extent that even Malpighi, Morgagni, Bichat, and

*J FERDINAND HUEPPE, *Naturwissenschaftliche Einführung in die Bakteriologie*, 1896. FRIEDRICH LOEFFLER, *über die Fortschritte in der Bekämpfung der Infektionskrankheiten in den letzten 25 Jahren*, 1896. MAX GRUBER, *Pasteur's Lebenswerk*, etc., 1896. Charcot, Bouchard, Brissaud *Traité de Médecine*, Vol. 1, 1891. G. M. Sternberg, *A Manual of Bacteriology*, 1892. Victor C. Vaughan and Frederick G. Novy, *Ptomains, Leucomains, Toxins and Antitoxins*, 3d Ed., 1896.

up to 1874 Virchow, gave their attention exclusively to the pathological anatomy of organs and tissues.

At that time, however, the question of the nature of putrefaction engaged the attention of many minds. Decomposition was proved to be organic in yeast by Astier in 1813; the so-called "bleeding hosts" were demonstrated by Sette in 1816 to owe their discoloration to bacteria. In 1837 Cagniard Latour studied the yeast deposits which he found during alcoholic fermentation. He proved them to be organic, and presumed they were the *cause* of fermentation. In the same year Schwann became more positive of this, and moreover found that extract of nux vomica did not stop fermentation, but that arsenic did. This is why he took it to be of vegetable nature. The same results were obtained by Turpin in 1838. Fuchs in 1841, Remak in the same year, and in 1843 Mitscherlich referred all fermentation to living microbes. The two last named authors were the first to find *two different microbes in two different forms of fermentation*. Helmholtz also participated in these researches without, however, excelling here as he did in almost everything else he undertook. It was only in 1857, however, that Pasteur could prove undeniably, in spite of Hiller's and others' remonstrations, that *all putrefaction and fermentation were attributable to microbes*, and that *each different fermentation had its own specific organic cause*.

Long before researches on the origin of the diseases of animals, Provost found in 1807, and deBary after him, the causes of diseases of plants to be microbic. Bassi and Balsamo discovered in 1835 the microbe of the "muscadine" disease of the silkworm, and Audouin the spores which enable the parasite to live through the winter. Schoenlein found the achorion to be the cause of tinea, Simon the acarus of the itch. It was shortly before this time that Henle, in 1840, formulated his conviction that infectious and contagious diseases were the result of living causes. His main reasons were these, that in such cases the morbid matter was evidently increasing from the moment of invasion. Organisms only have that faculty. Another reason was this, that the quantity of the invading material was out of proportion to the effects gradually obtained by it. Further, that there was a stage of incubation which was not required in poisoning by a definite dose of a simple chemical substance, and lastly, that the poison which is introduced in a very small quantity must increase before the disease can be expected to make its appearance.

Henle's theory suggested by the facts hitherto known, and supported by the published reports of Franz Schulze in 1836, and Schwann in 1837, was confirmed by Schroeder and von Dusch, 1854

and '61, by von der Broek, 1857, and by Pasteur. Pasteur having established as a sound fact the principle, *omne vivum ex vivo*—that is, nothing that is alive can possibly have come from what is dead—, and thereby annihilated the doctrine of spontaneous generation, and having further found that fermentation and putrefaction took place through external microbic influences only, Joseph Lister concluded that if wounds became infected through such living external influences only the latter should be kept away from them before they could reach them, or be destroyed. That was in 1867.

There was great activity in the study of bacteria from 1866 to 1876. Klebs found microbes in pyonephritis in 1866, Rindfleisch in pyæmia in 1856; soon after Recklinghausen and Waldeyer in metastatic abscesses, Klebs in gunshot wounds in 1872, others found them in septicæmia, erysipelas, hospital gangrene, puerperal fever, diphtheria, and finally, 1873, Obermeier in relapsing fever. In this way much valuable material was collected, but unfortunately but little sifted. It so happened that in similar conditions many varieties were found to occur simultaneously, by several in abscesses, also in diphtheria, in cholera, in variola. Pasteur found a number of bacteria in putrid material, but in most cases no positive decision was at that time arrived at as to the relationship of specific microbes or poisons to specific diseases. Besides, there was never such a scramble for notoriety as in those times. Dilettanti in journalism were as numerous as pickpockets at a fair or tramps after a battle. The medical weeklies and monthlies of that time teemed with new discoveries and new bacteria. Bacteria found in the dead body were proclaimed to be the cause of death, accidental finds the origin of a special disease; and hundreds of essays appeared at that time which proved nothing but carelessness in experiment or observation. Thus it could happen that even all the results obtained by one of the most active and ingenious experimenters, Hallier, could be proven by deBary to be worthless, because no protection had been procured against the accidental admixture of miscellaneous bacteria. At that time it took a great deal of mental equilibrium not to be swamped by the flood of new microbes. Indeed, in spite of the results already attained and appreciated, the profusion of immature publications was enough to create doubts and prejudices in the minds of many clinicians. It was at that time, in 1880, when finishing my treatise on diphtheria that I availed myself of that occasion to express my own feelings about the hasty and immature conclusions arrived at by the crowd of microscope fiends and leaned in the explanation of the diphtheritic process rather to a chemical poison than to the direct influence of a parasite. Riper experience, all built up on laboratory work, has since taught us that in

diphtheria as well as, with but few exceptions, in every infectious disease in whose development microbes are known to be concerned, it is a chemical product of the microbe only which penetrates into the circulation and destroys life. It is fortunate indeed that it should be so, for chemical poisons are more easily counteracted than living microbes circulating in the blood. The latter condition is present in anthrax. That is why Pasteur's inoculation of thousands of flocks of sheep with less virulent anthrax has not proved an unmitigated success. Deaths have taken place after such inoculations as they did when in the last century smallpox was inoculated to protect against smallpox. In southern Russia in such attempts at conveying protection thousands of sheep were destroyed. When speaking of this accident it was Haffkin, of whom I shall have more to say, who, shuddering, exclaimed, "If that happened to man!"

After many mistakes, amongst which one of the most prominent is the alleged isolation of Bergmann's "sepsin", Panum proved that *septic poisons could be derived from microbes*, after Coze and Feltz in 1866, and Burdon Sanderson, and in 1872 Davaine had succeeded in perpetuating infectious processes by persistent inoculations of the same microbes from animal to animal. As early as 1868 glanders had been produced by vaccinating its pus, and it was proved by the effects of immense dilution that the infecting material must necessarily be of organic nature. Still, the nature and manner of propagation of the microbe was not recognized. Finally in 1876 Koch discovered that the great vitality of the bacilli of anthrax, themselves very perishable, owed their vitality to the formation of spores.

Thus far the parasitic theory appeared to be rather firmly established, but still, as many believed in the excessive variability of bacteria, and attributed their many different forms to transmutation of a single original form, they were often believed to be not the *cause* but the *accompaniment* of the infectious process. All this happened in spite of the fact that Pasteur had differentiated the bacteria of wine and of beer fermentation, of anthrax, of sarcina, of amylobacter, and Obermeyer's specific spirillum of relapsing fever was known since he paid his self-sacrificing zeal with his own life. Another proof of the essential differences of bacteria was accidentally found by Schroeter who noticed differences in the color of his cultures, but a scientific differentiation became possible only when C. Weigert and later on Ehrich taught the systematic staining of bacteria by means of basic anilin dyes. With this method and better microscopes, and immersion, and the use of Abbe's condenser, Koch made rapid strides. In 1877 he published his treatise on the methods of research, and in 1878 the etiology of the

infection of wounds. About the same time Pasteur, 1877, after having proved in 1863 that normal blood was free of germs, demonstrated that the bacillus of anthrax would grow not only in the circulating blood, but also in blood outside the body and on other nutrients. Thus prepared, he and his pupils discovered a number of characteristic microbes: that of malignant œdema in 1877, the staphylococcus pyogenes in '78. that of the sputum-septicæmia, identical with the pneumococcus of Fraenkel, in '80, of chicken cholera in '89, of hog cholera in '82. Lister, Buchner, and Koch further improved the methods of examination until in 1882 the latter succeeded in demonstrating his bacillus of tuberculosis before the physiological society of Berlin. At this time it was conclusively proven that the microbes had each their peculiar etiological significance, that in fact it was a *single specific microbe which caused a single specific infection or contagious disease.*

Let me here try to correct what I believe to be a mistake and to give rise to confusion. The terms contagion and infection are too often used promiscuously, though they are by no means synonymous. The dissemination of mycotic diseases takes place in different ways. There are those which can not be communicated from person to person, but spread only by the microbic cause invading the individual. To this class belong malarial fevers produced by plasmodia. Malaria is not contagious; just so in all probability cerebro-spinal meningitis. There are, secondly, those which are not communicable from person to person but through external carriers only, such as soil, water, food, air, clothing and utensils. To that class belong yellow fever and Asiatic cholera. They are infectious. There are, finally, those which may be transmitted directly from a person, or indirectly through carriers. To this class belong scarlet fever, measles, diphtheria, variola, influenza, erysipelas and varicella, perhaps also whooping cough. They are contagious and infectious. As its cause has not been sufficiently proven to be microbic, I do not add syphilis. On no account, therefore, ought the terms contagion and infection be taken as synonymous.

The belief of Naegeli that the multiplicity of bacteria originated in a single or a few changeable varieties was proven to be erroneous partly by direct observation and partly by the results of cultures undertaken under varying circumstances. It can be demonstrated that the infectiousness of bacteria may be increased or lowered. That is what Buchner found in 1880 in regard to the bacillus of anthrax. The main progress in the following years was made by Pasteur either single handed or in coöperation with his pupils. In 1880 he found accidentally that the bacillus of chicken cholera was less virulent when the cultures were exposed to air and got cool. Still, the hens infected

with them became ill. After they recovered he infected them with thoroughly virulent germs, and, lo and behold! they were immune. From *that time dates all our modern protective and curative therapeutics of infectious diseases*. Pasteur then experimented with anthrax. A few of his results can be stated in the following brief sentences. The bacillus of anthrax did not develop in the blood of the living chicken. That is, the latter were immune against anthrax. But the bacilli *did* develop in the blood of chickens outside their bodies. The conclusion was that the presence of bacilli in the animal body was active or inactive, not *through its own properties, but only so far as the animal tissues permit of its influence*. The disease, therefore, is not established by the presence of the bacillus, but is the composite of the symptoms caused by the battle of the invader with the living cell.

Pasteur also found that the infected chick remained immune when retaining its own high temperature. When it was cooled by being immersed in water it fell sick, but recovered when again warmed. The conclusion is that the development and growth and injuriousness of bacilli, or some of them, depend on the *temperature of the medium* in which they are. He further found that the bacillus of anthrax grew in sterile urine when being alone in the fluid, but not when other bacilli were exposed together with it. This observation was confirmed by further experiments. When these bacilli were injected with other bacilli into an animal, the bacilli of anthrax did not thrive, and the animal remained well and alive. The discoveries followed one another in quick succession. Septic phlegmonous suppurative processes of all kinds were found to be caused by different bacilli. On the other hand, the same *microbe would cause different affections in different animals*. The bacillus of chicken cholera, for instance, produced general sepsis in the chicken, but a local abscess only in the guinea pig.

The virulence of the bacillus or its poison can be lowered in many ways; by high temperatures, partial desiccation, dilution by chemicals, or by culture of the original in different animals. Pasteur's experiments with the bacillus of anthrax were very numerous and efficacious. He produced cultures of lowered infectiousness and vaccinated sheep. It is true many died of the infection, but a great many were rendered immune, and the mortality from anthrax was very much reduced. Experiments made with the view of lowering the virulence of bacilli in other animals were also successful. That of hog erysipelas was thus changed when passing through the rabbit, and the poison of rabies, believed by Pasteur—though even he could not isolate it—to be the product of an organism, after unsatisfactory experiments with monkeys, was weakened by its passage through the same animal, viz.,

the rabbit. The indomitable man was successively engaged in finding new hypotheses based on well-known facts, and in experiments which were to prove or disprove the value of his hypotheses. In regard to rabies his reasoning was as follows: The long duration of its incubation proves the slow progress of the poison in the direction of the nerve centres, for it is of symptoms of the nerve centres that the patient infected by a mad dog finally dies. Thus the time between the infection and the affection of the nerve centre should be utilized by antitoxic injections. The poison must be intercepted. It is well known that the spinal cord of the rabbit is gradually and in proportion to the duration of its presence in the organ, changed by injection with fully virulent rabic poison, that the different degrees of morbid changes produced in its tissue yield a material which is employed for injection into the patient who has been, or is believed to have been infected. The attacks on this method, or rather its effects, are many, but it appears that the good done by it far outweighs its dangers or ill results. And one fact must never be forgotten: it is but little more than a decade since the method has first been employed. It has been the forerunner of other discoveries of similar import and of more and extensive utility. Thus it appears that the future therapy of infectious and contagious diseases will be built upon the foundation laid by the work performed in Pasteur's and other laboratories.

As far as Asiatic cholera is concerned, the discovery of the comma bacillus appears to have finally settled the question of its cause. The bacillus, however, does not enter the circulation, but destroys life by secreting a deadly poison. So does that of yellow fever; so does rabies, each with its own poison bred by its own specific bacillus. In these diseases it is not the weakened bacillus that can be expected to act as an antidote, but the lowered strength of the chemical poison. Thus it was that Ferran's therapeutical experiments with living cultures in 1885 were of doubtful importance. When cholera again appeared in 1890. Haffkin, of Russia, working in Pasteur's laboratory, found that cholera bacilli when cultured lose part of their activity. Imbued as he was with Pasteur's principles the light flashed upon him. The lowered activity of the culture bacilli could be expected to be utilized as the healing agent after having been tried on somebody. But animals are immune, so he made himself the object of experiment and, he did not die. Within two years afterwards, in the East Indies, he made 70,000 injections on 42,179 human beings in 98 different localities. No accident marred his operations, though pain followed each of them for four or five days. In order to control his experiments he always vaccinated a part of the population only. What were the results of his

laborious and self-sacrificing labors? In Calcutta the morbidity of those vaccinated fell to 1-19 or 1-24 compared with former experience; the mortality fell to 1-17 or 1-24. If in the near future—in Berlin they are experimenting at this moment on the action of dead cultures which appear to immunize—the methods will be improved, and the East Indian and Arabian pilgrims be vaccinated before they start for Mecca, “Death, where is thy sting! Grave, where is thy victory!”

As so much has been written on the subject of diphtheria, a few words may suffice on that form of this contagious and infectious disease which is caused by, or as some still say, accompanied with the Klebs-Loeffler bacillus. The bacillus locates on the mucous membrane of the naso-pharynx, sometimes on wounds. On the mucous membrane it produces a disease only when the surface is sore and thereby amenable to invasion. It does not enter the circulation, but produces a poison which is rapidly absorbed. When this chemical poison is injected into an animal in slowly increasing doses, which should be large enough to make sick but not to destroy, an antidote to the original disease is produced in the serum of that animal. This is the healing serum of Behring, which has succeeded in greatly reducing the mortality of diphtheria, and may be further proved to cause temporary immunity when injected into those who are well but constantly exposed. This almost fabulous result is the result exclusively of laboratory work. The success accomplished thus far speaks well for the future. It does not require an unbounded enthusiasm to believe that the results will be still more favorable in this dread disease which destroys the infants and children in every country by the ten thousands, and to trust that further study and experimental labors may find similar methods for the subjugation of other contagious and infectious diseases. The question of rabbit, sheep or horse rights ought not to be raised. We kill them and eat them to keep alive. In the laboratory we utilize them for the purpose of finding means to keep alive our people young and old, while but few, if any, are destroyed in the process. The problem will be to decide whether the future is to belong to the rabbit and sheep or to mankind.

All those results could not have been attained without experimentation on animals. The saving of animal and of human lives accomplished by its teaching is simply immense. Let us consider.

The investigation of the action of remedies can not be complete without it. Anthrax has lost its terrors amongst the French peasantry since Pasteur discovered how to reduce the mortality of their sheep. One of the most fearful calamities of former times, the terror of every woman who is to become a mother—childbed fever—has been reduced

to the very lowest figure wherever the teaching of animal experimentation has been heeded. Hydrophobia, fatal in every case, is now accessible to successful treatment. Myxœdema, an incurable disease a few years ago, has become curable in almost all instances, even cretinism in many. Tuberculosis may be, and is in part, confined within certain limits. The prevention of cholera is no longer a dream. The mortality of diphtheria has been reduced to one-half of what it was. The success of surgical operations under the influence of Listerism is simply marvellous; antisepsis and asepsis have been evolved out of the laborious studies of medical experts.

All these blessings, the enumeration of which has not exhausted the list, are the immediate results of experimentation on animals. To deny it is either ignorance or malevolence—mostly the former. In our times when nobody who is mortal can be acquainted with everything worth knowing, it is no reproach to be ignorant of topics known only to those who make them their special study. There is, however, another class of people with whom there is no reasoning. As long as the law of the land allows them to be abroad, you can only rely on the better judgment of the majority. This majority will not defile the name of “Christianity” to cover moral obtuseness, and that of “science” to shield intellectual hebetude. Those who refuse sleep to the sick unto death in order that they may pray, and a remedy to those in pain and dying of an acute disease—I know whereof I speak—they all are antivivisectionists. But there are also thousands of antivivisectionists amongst the educated men and women, and the legislators of the land, all of them philanthropically inclined, who because they can not, ought not to judge of these things. All of them, when taken sick, confide their lives to the judgment of the physician, ask no question and offer no criticism; but all of them, as long as their interest is theoretical only, express, perhaps even have, positive opinions dictated by their hearts, and allow their easily won sympathies to run away with their signatures under an antivivisection proclamation. What is it that makes the best talents of the medical profession; those who are most bent upon the elevation of the standard of science and the improvement of mankind; the great men amongst practitioners; the teachers of physiology, biology, and hygiene, adherents to animal experimentation? What is it, if not its indispensability?

You say that hundreds of M. D.'s add their signatures to the applications for the abolition of animal experimentation. Still, you do not say that you know how easy it is to gather names, such as they are, on every sheet of paper which is not a check or a promise to pay. Unfortunately it is too easy; and if the public does not know, we in

the profession know that there are M. D.'s and M. D.'s. There are those who make a living out of their profession—a trade out of a vocation—without ever having the clouds removed from their brains, or from their hearts, or from their consciences either, by solid knowledge of any kind, or by sympathy or the sense of responsibility. Do you expect that the hundred thousand practitioners—not every M. D. is a physician—of the United States are of equal knowledge, morality, public spirit and self-sacrifice? In other spheres you do not count names, you weigh them. When you require an exalted opinion based on the laws of the land or of humanity, you select an expert. In great economic and political questions you ask statesmen, but not the wire-pulling ward politician. And in a question of science, of physiology and hygiene, you want us to believe that you abide by the name of any M. D. in some distant corner whose name you have never heard, never will hear! But there is a famous man on the other side of the Atlantic. Famous! Yes, for did he not cut more abdomens than any living man? He is an apostle of antivivisectionism! I do not stand here, however, to criticise methods of operating or of making out statistics. What I always do when I want to take the measure of a medical man is to consult the opinion of the best men in science and in morals of his country. His weight is taken.

Who believes, or makes believe, that there is no sympathy, love for the living, or regard for life in those whose profession is more than any other an arduous labor of love? Or who, not a medical man, will decide what means must be selected to increase knowledge, and as every knowledge has its practical results, to benefit mankind? Is there any antivivisectionist who would not on principle employ antitoxin if his child be stricken with diphtheria? Or a woman who would refuse preventive measures due to animal experimentation exclusively, in order to avoid her own death or that of the newly born waif? It is no use to call antivivisectionists hard names. There is but one thing to do, namely, to appeal to their common sense, their duty to husband, wife, children. *Thus* it *has* come to pass that the English restrictive laws have been partly rescinded, and English medicine is thereby restored to the privileges of legitimate science. No prohibition of any kind ever worked well.

One of the objections to animal experimentation which we hear constantly from the lips of antivivisectionists is that the results of such procedures are unsatisfactory in as much as the struggles and the pain render the conclusions unequal and doubtful. That may be true to a certain extent, but as I have proved by facts, is not a barrier to the extension of our knowledge. To a certain extent it *is* true, however, and

some experiments can not be made without giving pain. But the light of science shines on animal as it does on man. Anæsthesia, which itself has not been developed without animal experimentation—and is it not a wondrous achievement?—has been a blessing to both man and animal. Under its influence there is no pain, no struggling, and less uncertainty as to the results of observation. Thus more humanity and more reliability go hand in hand. Nobody rejoices more intensely at that than the experimenter, for he can observe better, study better, and he need not himself suffer by giving pain to the helpless. Medical science and art were born out of the heart of man. The physical distress of man created love and helpfulness. It is not in the nature of things that the followers and apostles of medicine should be otherwise than thoughtful and sympathizing. This much I, who have been a close observer and a coworker of the medical profession of the state of New York these forty-three years, can say that I never knew of a medical man, practitioner or teacher, who was morally lowered by his practice or his scientific work. On the contrary, I find the old practitioner getting more cautious and sympathetic, and the pure scientist more considerate and circumspect from year to year. We are not angels, nor pretend to be in this life; but we do not forget, any more than any other heedful member of human and humane society, that “Though I speak with the tongues of men and of angels, and have not charity, I am become as sounding brass or a tinkling cymbal. And though I have the gift of prophesy and understand all mysteries, and all knowledge, and though I have all faith so that I can remove mountains, and have not charity, I am nothing.”

It is to me a constant source of painful surprise to find men and women ever ready to attribute bad, selfish and cruel motives to others. Do they think the great experimenters had an easy life? If there is an occupation that strains every physical, moral and intellectual labor, it is that of the close student of nature. Nor is the study of nature unattended with danger. When a soldier dies in the very moment that he is bent upon inflicting death upon his adversary he may be rewarded with admiring songs and a lasting monument. Every physician, every scientist is constantly on his field of battle, and he may die on it. Obermeier was not the only one who, when studying the spirillum of relapsing fever by night and day, sacrificed his life. For him there is no visible monument. Only a few months ago the magazines reported the death of a young experimenter who was killed by his object of study.

Nor is the story I heard Dr. Playfair tell a few days ago on the occasion of the Boston semi-centennial celebration of anæsthesia less

instructive. He was the co-operator of Simpson, of Edinburg, during and after the time of the discovery of chloroform, and busily engaged in finding other anæsthetics. Some day Simpson called and asked for news. He was told of a new compound that certainly was a powerful anæsthetic, and insisted on trying it immediately upon himself. Playfair refused, but proposed to try it again on some rabbits. Simpson having consented, called the following day. Having been informed that some time ago the rabbits were alive, he insisted upon an immediate experiment upon himself, and hardly allowed the time required to inspect the rabbits. They were brought up—dead.

Without deliberating long after hearing the tale, I decided in my mind that the death of the rabbits was not after all such a calamity as that of Simpson would have proved. I will also admit that, as I said before, I was ever of the opinion that the present and the future ought rather to belong to man, and not to the same degree to Guinea pigs, rabbits and horses. If man, and sympathetic woman also, are permitted to hunt and kill animals because they are good to eat—man is not meant to be a cabbage eater exclusively—it is still more pardonable to experiment on them as humanely as possible for the purposes both of serving the commercial interests of the people and to preserve the health and save the lives of human beings exposed to fatal devastation by vegetable microbes.

There is, however, an admission which should be made to the antivivisectionists and to public opinion, no matter if it be the dictate of the heart only. There ought to be some restriction to animal experimentation. To permit every individual, inquisitive student or private person to operate indiscriminately on animals for the sake of personal curiosity, I personally do not approve of it. Whatever experimentation is not intended or able to elevate the human mind, is liable to impair it. Flimsiness and frivolousness must not claim the mantle of sacred science. I am not ready to admit that the sweet will or the thoughtless meddling of anybody who calls himself a medical student should be encouraged to do work will not lead to serious scientific conclusions. To experiment on the living with results leading to the improvement of science, and to benefit the art of preventing and healing diseases, takes thorough knowledge and high aims. Nor am I prepared to approve of indiscriminate lecture-room demonstrations on living animals before college classes of medical students and still less in public schools. They belong to laboratories, such as the intelligent generosity of a fellow citizen of yours has established for you. Here is all the mechanical and scientific skill, here are the facilities and preparatory studies required for the consummation of our aims and ends.

Here it is that such advanced students and graduates who have the skill and knowledge and ambition demanded of future teachers of science, and benefactors of mankind, may be instructed. The interests of human and humane science are amply guarded by some such restrictions as will confine animal experimentation to institutions specially calculated for such purposes. To them it may be confined. In them, however, it *should be protected*. And instead of being hampered by the intrusion of uninformed and jealous watchmen, as has been proposed, it should be treated with admiration and reverence. What the church and sanctuary are to the religious, what the hall of a library is to the student of history and science, that is the laboratory to the explorer of the mysteries of life, and to the teacher of those secrets the revelation of which is indispensable for the protection of mankind, and the enhancement of its felicity.

The solemnity of the occasion which affords me an opportunity to speak to you this evening, and the indulgence exhibited to me, encourage me to speak in connection with this laboratory of hygiene of a subject intimately connected with it. The Bender Laboratory of Hygiene as planned and established will have two objects, at least for the nearest future. I understand it is meant to be the place where systematic efforts will be made to increase, by new and original research, the stock of such knowledge as will prevent, wherever it will reach, the origin and dissemination of contagious and infectious diseases. Its further destination in connection with the Medical College and its hospital is to furnish the means of an exact diagnosis of the cases entrusted to the painstaking care of the hospital physicians. From the standpoint of philosophy and humanity these two ends, it is true, belong together. The first is to benefit all humanity. The second includes the scientific labors calculated for the individual sick. It seems to me, however, that you will soon learn that the interests of science as a whole and those of the patients in your wards can be better served by separating them. Indeed, the laboratory of hygiene ought to labor exclusively in the service of the scientific and social community; the hospital in that of the individual man, woman and child. Laboratories like this new abode of science are but a few dozen years old. Within that short period many of the aspects and aims, not only of theory, but of practice have been changed. A modern hospital is as different from that but twenty-five years old as a comfortable, clean, ventilated, spacious, cozy and healthy house of yours differs from the lodge of the pioneer. He lived in it, but its barrenness and exposure are not the consummation of human civilization and cultured existence. Modern science means to make hospitals modern

institutions and succeeds in so doing. Whatever contributes to the comfort and welfare of the patient—ample space, light and food, all the resources of science—society places at the disposal of its wards. In this way hospitals have become a school. not only for the medical man, but for the public also. There is particularly one demand which ought to be fulfilled in every hospital.

There ought to be, there must be laboratory facilities in and directly connected with every modern hospital. It requires no demonstration that rational treatment is not possible without a correct and minute diagnosis. Blood, sputum, urine, fæces, stomach contents, tumors, eruptions, require a careful examination. There is scarcely a case nowadays that does not require some one examination of the kind. Nor is it enough in blood diseases, for instance, to count cells, compare red cells and leucocytes. These very leucocytes assume different characters and undergo the most various changes. The indistinct class of fevers which tempt so much to call them malaria, perhaps because the mellifluous and foreign sounding word is relished by the people, require for diagnosis examination for plasmodium, or the bacterium coli commune or streptococcus. The cases in which neither was found, but an encephalitis explained all the symptoms, are not rare within my own experience.

The examination for tubercle bacilli facilitates the diagnosis of the true nature of peritonitis which may depend on appendicitis, tuberculosis, carcinoma, or the invasion of the bacterium coli commune, pneumococcus, or streptococcus. The very diarrhœa of the child is far from being always catarrhal or the reflex of external exposure and irritation. It is mostly the result of the bacterium lactogenes, or coli commune, or a hay bacillus. The very selection of the milk food is a matter of grave responsibility which often can be shouldered only by a person equipped for microscopical and bacteriological examination. The latter is by no means so simple as it was thought to be when knowledge was less and faith greater. It is not more than a dozen years ago that a gentleman who admired his universal standing as a microscopist told me that he disdained the use of stains, for what he could not see without dyeing and understand, did not exist. Now he is staining.

The labor connected with every single hospital case has greatly increased with the accumulation of new knowledge. Even a layman uninstructed in medical matters, appreciates that difficulties grow with results, results with difficulties. So the best achievements of a hospital require from year to year more facilities, because they demand more work. Without the former, the latter remains sterile. The faithful

blending of practical labor and scientific research finds no better illustration than a thoroughly modern hospital with a clinical laboratory attached. What I mean to suggest, in your case, is that in no distant future the hospital work ought to be performed not only in the sick wards, but also in a clinical laboratory immediately connected with them. All scientific work, however, unconnected with a special case, unless its interest and importance be of unusual magnitude, ought to be delegated to this new institution.

The necessity of equipping a hospital with all that is required by the laws of hygiene and the demands of scientific diagnosis concerns not alone the individual patient or the attending physician. It reaches further. By facilitating research, it adds to common knowledge and improves the chances of not only the patient, but of the future patients and doctors. Indeed, every such hospital is a school for the medical profession at large and at the same time a benefit to the community. Are there short-sighted objections? O, yes! Our fathers did without all this. The hospital was considered good as it was only ten or twenty years ago. Our old doctors were good doctors and a blessing to the community, and learned men. I say *Amen*. It is true there were no better men than Marsh, and Vanderpool, and Thomas Hun. Certainly their names are always mentioned when the best are recalled. But as they were learned, and conscientious, and eager and as good citizens as they were great doctors, they would stand by us as they often did, in our fights for better schools, better hospitals, more and better institutions, and more facilities to learn and to teach. They, one and all, would look about in the advanced and advancing state of science and practice, for a new hospital for the sake both of the community and the college which is to furnish medical advisers to the families of the country, and the future teachers. The example given by your sympathizing, enlightened, and public spirited fellow citizen, whose name I need not mention as it is in every heart and upon every lip, should be, will be, an incentive to others whose hearts are taught by their brains, whose brains are warmed by their hearts to give you and the city a well equipped, competent new hospital.

Spanish Losses in Cuba.—It is estimated in Madrid that since the beginning of the Cuban revolution, the army of occupation has lost nearly fifty thousand men, of whom by far the greater number died from disease. The total number of patients in the military hospitals in one day recently was 9,475, of whom 1,035 were suffering from yellow fever, 1,331 from malaria, and 520 from wounds.—*Medical Record*.

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ANNOTATIONS.

Safety from Lightning Stroke in Cities.—A curious fact connected with deaths by lightning has recently been noticed in Europe. It appears that, as compared with the country, towns, and especially cities, possess remarkable immunity from lightning strokes. The statistics which have been compiled on the subject show that between 1800 and 1851 there was not a single death by lightning recorded in Paris, and that only one person out of each million that die in London is taken off by a discharge from nature's electric battery. Between 1851 and 1895 only three persons were struck by lightning in Paris and only one of these three cases resulted fatally. In Berlin only five persons have been struck by lightning since 1713.—*College and Clinical Record*,

The Distribution of Sterilized Milk in New York and Brooklyn.—Statistics obtained at the health department show the good effects of free distribution of sterilized milk in Brooklyn under the auspices of the board of health, a charitable work that was made possible through the philanthropy of Mr. Nathan Strauss. The death rate during the second week of the recent hot weather among children under five years of age was only 34.4 of the total number of deaths, which is quite a remarkable showing when it is considered that the general death rate was exceptionally high owing to the excessive heat. It is necessary to go back to the beginning of June to find a week when the death rate among children was as low as that. During the period when the heat was most intense Mr. Strauss sent over to Brooklyn about 1,500 bottles of sterilized milk a day. A large force of men was employed at the New York depots getting the milk ready for distribution, and it was

transported to Brooklyn at the expense of and with the wagons and horses of the donor,—*Boston Medical and Surgical Journal*.

Medical Society of the State of New York Business Committee.

—The Business Committee of the Medical Society of the State of New York, consisting of the following members has been appointed; Dr. Seneca D. Powell, 12 West 40th street, New York, chairman; Dr. Willis G. Macdonald, 27 Eagle street, Albany; and Dr. Ernest Mende, 471 Delaware avenue, Buffalo. Communications concerning papers to be presented at the medical meeting of the Society, which is to be held in Albany, January 26, 27 and 28 next, may be addressed to them or to the President of the Society, Dr. James D. Spencer, of Watertown.

F. C. CURTIS,

Secretary,

The Roentgen Ray as a Moral Agent.—The Union Medicale, March 28th, reported the case of a young woman who applied for an operation on account of pains in her arm, as she was convinced that there was some abnormal condition of the bone. The surgeon diagnosed the case as the effect of a slight traumatism on a hysterical subject, and by taking a photograph of the arm proved to her that it was perfect. Once convinced of this the patient left entirely cured.—*The Journal of the American Medical Association*.

Typhoid Fever from Ice Cream.—An outbreak of typhoid fever occurred during the later part of July in the town of East Barrington, N. H. The cases were all traced to a single source. The first case was an unrecognized one, the patient being unwell but helping about the house and doing part of the milking. It is supposed that he must have in some way contaminated the milk, as by going to stool and not washing his hands before returning to the milking. The water supply was carefully examined and found to be all right. On Friday evening a party was given at the house and guests ate of ice cream made at home from the milk supply referred to above. Within the next ten or fourteen days fourteen of the guests came down with the typhoid fever—eight in the town of Barrington, of whom one died; two in Lee; one each in Dover, Rochester and Woodbury, N. H., and one in Haverhill, Mass. All of these out-of-town cases were guests at the party. No other cases occurred in the town and all were partakers of the cream.—*Boston Medical and Surgical Journal*.

The "X" Rays Did Not Depilate.—A man in Paris heard of a case in which the hair all fell out from a patch exposed to the X-rays, and thought he had discovered a way to make his fortune. He accordingly advertised that he would guarantee to remove the mustaches and whis-

kers with which some French women are adorned. He took his fees and exposed the patients to the apparatus, but, as the hair showed no sign of disappearing, he was straightway arrested for fraud.—*Medical Record*.

The Bicycle in First Aid to the Injured.—A suggestion made a year or more ago by the *Medical Record* was shown to be of practical utility a few days ago in a bicycle accident in this city. One of the first to reach the unconscious wheelman was a mounted policeman (on his wheel). Acquainting himself with the serious nature of the case he immediately remounted and sent in an alarm call from the nearest box. Before the spectators had time to realize that any proper steps were being taken, a surgeon with the red cross of his calling upon his sleeve arrived upon his bicycle and took charge of the case, while the ambulance to which he belonged followed with the lesser speed of horse power propulsion.—*Medical Record*.

A New Method of Diagnosis in Typhoid Fever.—In *La Presse Medicale* (July 29, 1896) Widan describes a method used by him as a test for the diagnosis of typhoid fever which has not failed in eighty cases examined. The test rests upon the action of the serum of a typhoid patient upon young cultures of coli bacilli growing in bouillon. It is performed in several ways. From a finger-tip carefully sterilized by bichloride of mercury solution and ether a small quantity of blood is drawn into a glass receptacle and allowed to clot. If a few drops of the serum (one for every ten drops of bouillon) are introduced into a young bouillon culture of coli bacilli, these will in a short time gather themselves together into little balls, sometimes visible to the naked eye and always easily noticeable by the aid of the microscope. The reaction may be evident in a few minutes, but it is more marked after a few hours. It is desirable to use a culture of the bacilli only a day or so old, but if no fresh one is at hand, another method may be used. A tube of bouillon is sowed with some of the old coli bacilli cultures (no fresh cultures being at hand), and the typhoid serum is added in the proportion of one drop of serum to three cubic centimeters of bouillon. After twenty-four or forty-eight hours at 37 C. the same reaction described above is discernible. A control tube is recommended, the coli bacilli being omitted as the blood-serum may not be sterile.—*Medical News*.

The Roentgen Rays in Nature.—At a recent meeting of the British Association for the Advancement of Science, Dr. Dawson Tucker stated that the ordinary glow-worm emits x-rays which will pass through solid bodies, even a thin sheet of aluminum. It is probably not visible light from the insect which does it, for Dr. Rawson Tucker in his experiments had a good deal of difficulty in getting the worms to glow, but he found that even when not visibly glowing they gave off a radiation which affected the photographic plate.—*Medical Journal*

Dark Ways and Vain Tricks.—We examined recently a sample of so-called cardamon specimens obtained from an East Indian correspondent. These are not cardamon seed, but a very curious and accurate imitation of the pods. It was suggested that the specimens were made of clay, carefully moulded into the shells of the cardamon seeds, thus making an almost perfect imitation, but this can hardly be true, since the inner part of the cardamon shells is perfectly smooth. More probably a plaster cast is obtained of the outer surface of the cardamon shells, and moulds obtained from these plaster casts.—*Bulletin of Pharmacy*.

REVIEWS AND BOOK NOTICES.

Annual of the Universal Medical Sciences and Analytical Index.—A Yearly Report of the Progress of the General Sciences Throughout the World. Edited by Charles E. Sajous, M. D., Paris, and Seventy Associate Editors, Assisted by over Two Hundred Corresponding Editors, Collaborates and Correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Five Volumes, \$15.00. 1896. The F. A. Davis Company, Publishers, Philadelphia, New York, Chicago.

The objects of the Annual are two-fold. First, to enable investigators, specialists and authors quickly to compare the work of the best minds who have been writing on their special subject, and also to present to them a large number of utilizable facts; and, second, to save the time of the busy general practitioner by giving him in the most concise manner the most recent knowledge and the newest methods of treatment of every variety of morbid conditions, which have been advocated during the preceding year,

In the preface, the Editor truly says; "The epoch of absolute specialism truly belongs to the past; every disease known represents but one link of a chain, and to totally ignore portions of that chain is

to refuse the light its other links may afford and to limit one's capabilities, In practical medicine this is not permissible."

To save labor on the part of the reader an Analytical Index or Cyclopaedia of Treatment is added, which is an elaboration of the General Index of Diseases of previous editions.

The present Analytical Index is a great improvement over the old style, it being more full, and valuable in every way, and the type being larger it is easier to read; it occupies over three hundred and fifty pages of Volume V, nearly three times as much as in the old editions.

The same painstaking care in epitomizing articles through the body of the work is manifested in this year's series, as has been observed in previous editions.

The Annual of the Universal Sciences is a work which no physician should be without.

READING NOTICES.

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